On activation of the starting solenoid, the start position must be reached. APPLICATION Omnibus

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Cam sequence
                                                                            : 1-5-3-6-2-4
Note inst. in remarks column
                                                        SD ang. spacing ^{0} CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Test sheet
                     : VOL 10.0 Q
                     : 12.06.87
Edition
                    : 11.82
Superceeded
Calibrating oil : ISO-4113
                                                        SD mark cyl. no. : 1
                     : 0 401 846 759
                                                        BASIC SETTING
Combination no.
Injection pump
                                                        1st speed
                                                                        1/mi: 700
Pump designation : PE6P110A320RS3108Y
EP type number
                     : 0 411 816 729
                                                        Contr.-rod trav.mm: 11.10...11.20
Governor
                     : RQV250...1100PA649
: 0 421 815 346
Governor design.
                                                        Del.quantity cm3/: 13.8...14.0
Governer no.
                                                                       100H.: (13.5...14.3)
Customer-spec. information
                                                        Dispersion
                                                                       cm3/:0.4
Customer
                     : VOLVO
                     : THD 100EC
                                                                       100H.: (0.7)
Engine
                                                        2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/: 3.2...3.6

100H.: (2.9...3.8)

Dispersion cm3/: 0.3

100H.: (0.6)
1st version kW : 180.0
Speed
               1/min: 2200
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                     : 38...42
                                                         (B) Setting of injection pump with
Overflow valve
                                                             externally-mounted governor
                     : 1 417 413 025
                                                        SLEEVE TRAVELS
                                                                      1/min: 250
Inlet press., bar : 1.50
                                                        1st speed
                                                           Sleeve travel mm: 1.10...1.30
                                                        2nd speed 1/min: 500
Calibrating nozzle-holder
                   : 0 681 343 009
                                                           Sleeve travel mm: 4.10...4.90
 assembly
                                                                      1/min: 700
                                                        3rd speed
                                                           Sleeve travel mm: 6.30...6.70
Opening
 pressure, bar : 172...175
                                                                      1/min: 950
                                                        4th speed
                                                           Sleeve travel mm: 6.30...6.70
                                                        5th speed 1/min: 1100
                                                           Sleeve travel mm: 7.00...7.50
Test inj. tubing : 1 680 750 015
                                                        SLEEVE POSITION
Outside diameter
x Wall thickness
                                                        Control-lever position
                   : 6.00x1.50x600
                                                                      Degree: -1
1/min: 1175
x Length mm
                                                        Speed
                                                        Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                        1st version
START OF DELIVERY
                                                                       1/min: 700
                                                        Speed
                                                        Charge press. hPa: 900
Del.quantity cm3/: 138.0...140.0
1000H.: (135.0...143.0)
Dispersion cm3/: 4.00
Test pressure, bar: 25...27
                     : 3.00...3.10
Prestroke mm
                     : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
                                                                      1000H.: (7.50)
A02
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 55...63 Testing: 1st c-rod trav.mm : 10.10 1/min: 1140...1150 Speed 2nd c-rod trav.mm : 4.00 1/min : 1205...1235 1/min : 1350 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: 1/min : 100 Speed C-rod trav.mm min: 6.70 1/min : 250 .... : 5.00...5.20 mm : 2.00 Speed C-rod trav. ... C-rod trav.mm 1/min : 345...405 Speed compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 500 hPa : 900 Pressure Contr.-rod trav.mm: 11.10...11.20 Measurement 1/min : 500 Speed 1st pressure hPa : : 9.60...9.80 C-rod trav.mm 2nd pressure hPa : 275 : 9.90...10.00 C-rod trav.mm 3rd pressure hPa : 400 C-rod trav.mm : 10.70...10.90 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 105.5...108.5 1000H.: (103.0...111.0) STARTING FUEL DELIVERY 

Contr.-rod trav.mm: 20.00...21.00

A03

LOW IDLE

Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm
On activation of the starting solenoid, the start position must be reached.

APPLICATION Omnibus

```
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                   : VOL 10,0 Q1
Edition
                   : 12.06.87
Superceeded "
                   : 11.82
                   : ISO-4113
Calibrating oil
                                                     SD mark cyl. no. : 1
Combination no.
                   : 0 401 846 760
                                                     BASIC SETTING
Injection pump
                                                                    1/mi: 700
                                                     1st speed
Pump designation : PE6P110A320RS3108X
                                                     Contr.-rod trav.mm: 12.10...12.20
EP type number
                   : 0 411 816 730
Governor
                                                     Del.quantity cm3/: 15.9...16.2
Governor design. : RQV250...1100PA649
                   : 0 421 813 346
Governer no.
                                                                   100H.: (15.6...16.4)
Customer-spec. information
                                                                   cm3/:0.4
Customer
                   : VOLVO
                                                     Dispersion
                   : THD 100ED
                                                                   100H.: (0.7)
Engine
                                                     2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.0...5.2
                 : 203.0
1st version kW
              1/min: 2200
Speed
                                                     Del.quantity cm3/: 3.2...3.6
                                                                   100H.: (2.9...3.8)
TEST BENCH REQUIREMENTS
                                                     Dispersion
                                                                   cm3/:0.3
Calibrating-oil inlet temp. C
                                                                   100H.: (0.6)
                   : 38...42
                                                     (B) Setting of injection pump with
Overflow valve
                                                         externally-mounted governor
                   : 1 417 413 025
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 250
Inlet press., bar: 1.50
                                                       Sleeve travel mm: 1.10...1.30
                                                     2nd speed 1/min: 500
Calibrating nozzle-holder
                  : 0 681 343 009
                                                       Sleeve travel mm: 4.10...4.90
 assembly
                                                       d speed 1/min: 700
Sleeve travel mm: 6.30...6.70
                                                     3rd speed
Opening
pressure, bar : 172...175
                                                                 1/min: 950
                                                     4th speed
                                                       Sleeve travel mm: 6.30...6.70
                                                                1/min: 1100
                                                     5th speed
Test inj. tubing
                  : 1 680 750 015
                                                       Sleeve travel mm: 7.00...7.50
                                                     SLEEVE POSITION
Outside diameter
                                                     Control-lever position
x Wall thickness
                   : 6.00x1.50x600
                                                                 Degree: -1
1/min: 1175
x Length mm
                                                     Speed
(A) Injection pump setting values
                                                     Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
    Set constant delivery quant.
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                     1st version
START OF DELIVERY
                                                     Speed
                                                                   1/min: 700
                                                    Charge press. hPa: 1200
Del.quantity cm3/: 159.0...162.0
1000H.: (156.5...164.5)
Dispersion cm3/: 4.00
Test pressure, bar: 25...27
                   : 3.00...3.10
Prestroke mm
                   : (2.95...3.15)
                                                                  1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
```

A04

HIGHEST RATED SPEED 1st version Control-lever position degrees: 61...69 Testing: 1st c-rod trav.mm : 11.10 Speed 1/min : 1140...1150 2nd c-rod trav.mm : 4.00 1/min : 1205...1235 Speed 1/min : 1350 4th speed : 0.00...1.00 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 8...12 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.70 1/min : 250 Speed C-rod trav.mm : 5.00...5.20 : 2.00 C-rod trav.mm 1/min : 345...405 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 1200 Pressure Contr.-rod trav.mm: 12.10...12.20 Measurement 1/min : 500 Speed 1st pressure hPa : -: 9.30...9.40 C-rod trav.mm : 290 2nd pressure hPa : 9.60...9.70 : 700 C-rod trav.mm 3rd pressure hPa C-rod trav.mm : 11.80...12.00 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 105.5...108.5 1000H.: (103.0...111.0) STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 160.0...190.0 1000H.: (156.0...194.0) Contr.-rod trav.mm: 20.00...21.00

A05

LOW IDLE

1/min : 250 Speed Contr.-rod trav.mm: 5.00...5.20 Del.quantity cm3/: 32.0...36.0 1000H.: (29.5...38.5) Dispersion cm3/: 3.00 1000H.: (6.00)

Remarks: Delivery-valve spring pre-tension = 2.40...2.60 mm. Permissible alteration from 2.20...2.90 On activation of the starting solenoid,

the start position must be reached.

**APPLICATION** 0mn i bus

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
Test sheet
                    : SCA 11,0 R6
                                                         SD mark cyl. no. : 1
                     : 09.03.87
Edition
Superceeded
                                                         BASIC SETTING
                     : 1.85
                    : ISO-4113
Calibrating oil
                                                                          1/mi: 700
                                                         1st speed
Combination no.
                     : 0 401 846 763
                                                         Contr.-rod trav.mm: 13.60...13.70
Injection pump
                                                         Del.quantity cm3/: 16.8...17.0
                    : PE6P110A720RS3040
Pump designation
                    : 0 411 816 713
EP type number
                                                                         100H.: (16.6...17.2)
Governor
Governor design. : RQV200...1000PA555-1
Governer no. : 0 421 813 361
                                                         Dispersion
                                                                         cm3/:0.6
Customer-spec. information
                                                                         100H.: (0.8)
Customer
                     : SCANIA
                                                                         1/min: 225.0
                                                         2nd speed
                     : DS11 14
                                                         Contr.-rod trav. m: 4.4...4.6
Engine
                                                         Del.quantity cm3/: 1.7...2.1
100H.: (-)
TEST BENCH REQUIREMENTS
                                                                        cm3/: 0.2
                                                         Dispersion
Calibrating-oil inlet temp. <sup>B</sup>C
                                                                         100H.: (0.4)
                     : 38...42
                                                          (B) Setting of injection pump with externally-mounted governor
Overflow valve
                     : 1 417 413 025
                                                         SLEEVE TRAVELS
                                                         1st speed 1/min: 225
Inlet press., bar : 1.50
                                                            Sleeve travel mm: 1.30...1.40
                                                         2nd speed 1/min: 330
Calibrating nozzle-holder
                                                         Sleeve travel mm: 2.30...2.70

3rd speed 1/min: 550

Sleeve travel mm: 3.90...4.20

4th speed 1/min: 1040

Sleeve travel mm: 8.00...8.20
                  : 0 681 343 009
 assembly
Opening
 pressure, bar : 172...175
                                                         5th speed 1/min: 1160
                                                           Sleeve travel mm: 9.60...9.90
Test inj. tubing : 1 680 750 015
Outside diameter
                                                         SLEEVE POSITION
x Wall thickness
                                                         Control-lever position
                     : 6.00x1.50x600
                                                                       Degree: -1
1/min: 1070
x Length mm
                                                         Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values ____
                                                         1st version
START OF DELIVERY
                                                                         1/min: 700
                                                         Speed
                                                         Charge press. hPa: 900
Del.quantity cm3/: 168.0...170.0
1000H.: (166.0...172.0)
Dispersion cm3/: 6.00
Test pressure, bar: 25...27
                     : 3.30...3.40
Prestroke mm
                     : (3.25...3.45)
Contr.-rod trav.mm: 9.00...12.00
                                                                       1000H.: (8.00)
Cam sequence
                    : 1-5-3-6-2-
                                                         HIGHEST RATED SPEED
                                                         1st version
```

Control-lever position degrees: 57...65 Testing: 1st c-rod trav.mm : 12.60 1/min : 1040...1050 Speed 2nd c-rod trav.mm : 4.00 1/min: 1150...1180 Speed 1/min : 1300 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 4...12 Testing: Speed 1/min : 100 C-rod trav.mm min : 5.90 1/min : 225 Speed : 4.40...4.60 C-rod trav.mm C-rod trav.mm : 2.00 1/min : 310...370 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 hPa : 900 Speed Pressure Contr.-rod trav.mm: 13.60...13.70 Measurement 1/min : 500 Speed 1st pressure hPa : 12.00...12.10 C-rod trav.mm 2nd pressure hPa : 420 : 13.20...13.30 C-rod trav.mm : 290 3rd pressure hPa : 12.30...12.50 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 1000 Speed Del.quantity cm3/: 171.5...176.5 1000H.: (169.0...179.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 133.0...137.0 1000H.: (131.0...139.0) STARTING FUEL DELIVERY 1/min : 100 Speed

A07

Del.quantity cm3/: 240.0...290.0 1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 225 Contr.-rod trav.mm: 4.40...4.60 Del.quantity cm3/: 17.0...21.0 1000H.: (-) Dispersion cm3/: 2.00

1000H.: (4.00)

Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania on August 29, 1983 Start of delivery - engine: 190 before Firing sequence of engine: 1-5-3-6-2-4.

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence
Note inst. in remarks column
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : VOL 10.0 03
: 12.06.87
Test sheet
Edition
                   : 10.12.86
Superceeded
Calibrating oil
                 : ISO-4113
                                                     SD mark cyl. no. : 1
                   : 0 401 846 768
                                                     BASIC SETTING
Combination no.
Injection pump
                                                                    1/mi: 700
                                                     1st speed
Pump designation : PE6P110A320RS3080-1
                                                     Contr.-rod trav.mm: 13.20...13.30
                   : 0 411 816 734
EP type number
Governor
Governor design. : RQV250...1025PA589
                                                     Del.quantity cm3/: 17.9...18.2
Governer no.
                  : 0 421 813 332
                                                                   100H.: (17.7...18.5)
Customer-spec. information
Customer
                   : VOLVO
                                                     Dispersion
                                                                   cm3/:0.4
                                                                   100H.: (0.7)
Engine
                   : TD100FA
                  : 220.0
                                                                   1/min: 250.0
1st version kW
                                                     2nd speed
                                                     Contr.-rod trav. m: 4.3...4.5
Speed
              1/min: 2050
                                                     Del.quantity cm3/: 1.5...1.9
                                                                   100H.: (1.2...2.1) cm3/: 0.3
TEST BENCH REQUIREMENTS
                                                     Dispersion
Calibrating-oil inlet temp. C
                                                                   100H.: (0.6)
                   : 38...42
                                                      (B) Setting of injection pump with
                                                         externally-mounted governor
Overflow valve
                   : 1 417 413 025
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 250
Inlet press., bar: 1.50
                                                       Sleeve travel mm: 1.20...1.30
                                                     2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.80
Calibrating nozzle-holder
 assembly
                  : 0 681 343 009
                                                       d speed 1/min: 430
Sleeve travel mm: 3.50...3.90
                                                     3rd speed
Opening
pressure, bar
                                                                   1/min: 1080
                  : 172...175
                                                     4th speed
                                                       Sleeve travel mm: 8.40...8.50
                                                     5th speed 1/min: 1150
                                                       Sleeve travel mm: 9.50...9.80
Test inj. tubing : 1 680 750 015
                                                     SLEEVE POSITION
Outside diameter
x Wall thickness
                                                     Control-lever position
                                                                  Degree: -1
                  : 6.00x1.50x600
x Length mm
                                                                   17min: 1080
                                                     Speed
                                                     Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                     1st version
START OF DELIVERY
                                                     Speed
                                                                   1/min: 700
                                                     Charge press. hPa : 900
Test pressure, bar: 25...27
                                                     Del.quantity cm3/: 179.5...182.5
1000H.: (177.0...185.0)
Dispersion cm3/: 4.00
Prestroke mm
                   : 3.00...3.10
                   : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
                                                                  1000H.: (7.50)
A08
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 12.20
Speed 1/min: 1085...1095
2nd c-rod trav.mm: 4.00
             1/min: 1160...1190
  Speed
             1/min: 1300
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 5...13
Testing:
Speed
             1/min : 100
C-rod trav.mm min : 5.80
Speed 1/min : 250
C-rod trav.mm : 4.30...4.50
CONSTANT REGULATION
Speed
             1/min : 270...380
 compensator (LDA,ADA,ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
             hPa : 900
Contr.-rod trav.mm: 13.20...13.30
Measurement
            1/min : 500
Speed
1st pressure hPa : -
                   : 10.50...10.60
  C-rod trav.mm
                   : 670
2nd pressure hPa
                   : 13.00...13.10
  C-rod trav.mm
                   : 270
3rd pressure hPa
  C-rod trav.mm
                    : 10.80...11.10
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
             1/min : 1000
Speed
Del.quantity cm3/: 171.0...177.0
1000H.: (169.0...179.0)
Charge press. hPa : -
             1/min : 700
Speed
Del.quantity cm3/: 132.0...135.0
             1000H.: (129.5...137.5)
STARTING FUEL DELIVERY
```

A09

```
Speed 1/min: 100
Del.quantity cm3/: 150.0...200.0
1000H.: (146.0...204.0)
Contr.-rod trav.mm: 20.00...21.00
```

## LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 4.30...4.50 Del.quantity cm3/: 15.0...19.0 1000H.: (12.5...21.5) Dispersion cm3/: 3.00 1000H.: (6.00)

Remarks:
Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                            : 2.60...2.70
                                                        Prestroke mm
                                                                            : (2.55...2.75)
Note inst. in remarks column
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam sequence : 1-5-3-6-2-4
Test sheet
                    : VOL 12,0 K
Edition
                    : 21.05.87
                    : 12.9.86
: ISO-4113
Superceeded
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Calibrating oil
                    : 0 401 846 772
Combination no.
                                                        SD mark cyl. no. : 1
Injection pump
                    : PE6P12OA32ORS3118
                                                        BASIC SETTING
Pump designation
EP type number
                    : 0 411 826 726
                                                        1st speed 1/mi: 700
Governor
Governor design. : RQV250...1025PA6S7
Governer no. : 0 421 813 368
                                                        Contr.-rod trav.mm: 13.30...13.40
                                                        Del.quantity cm3/: 23.8...24.1
Customer-spec, information
Customer
                    : VOLVO
                                                                       100H.: (23.5...24.4)
                    : TD 121 F
Engine
                                                        Dispersion
                                                                      cm3/:0.5
1st version kW : 282.4
Speed
               1/min: 2050
                                                                       100H.: (0.9)
                                                       2nd speed 1/min: 250.0
Contr.-rod trav. m: 3.3...3.5
Del.quantity cm3/: 1.8...2.3
100H.: (-)
Dispersion cm3/: 0.5
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                       100H.: (0.7)
Overflow valve
                    : 1 417 413 000
                                                        SLEEVE POSITION
                                                        Control-lever position
Inlet press., bar : 1.50
                                                                     Degree: -1
                                                                      17min: 1090
Calibrating nozzle-holder
                                                        Speed
                    : 1 688 901 019
                                                        Cont.-rod travelmm: 15.20...17.80
 assembly
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
                    : 207...210
 pressure, bar
                                                        1st version
                                                       Speed 1/min: 700
Charge press. hPa: 1200
Del.quantity cm3/: 238.0...241.0
1000H.: (235.0...244.0)
Dispersion cm3/: 5.00
Perforated-plate
 diameter mm
                    : 0,8
Test inj. tubing
                    : 1 680 750 067
                                                                     1000H.: (9,00)
Outside diameter
x Wall thickness
                                                        HIGHEST RATED SPEED
                    : 6.00x1.50x1000
                                                        1st version
x Length mm
                                                        Control-lever
                                                        position degrees: 61...69
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                        Testing:
                                                        1st c-rod trav.mm: 12.30
    per values
                                                          Speed 1/min: 1085...1095
START OF DELIVERY
                                                        2nd c-rod trav.mm: 4.00
                                                                    1/min : 1150...1180
Test pressure, bar: 25...27
                                                          Speed
                                                        3rd c-rod trav.mm : 4.00
```

```
4th speed 1/min: 1250
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 6...14
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 4.80
            1/min : 250
Speed
            mm : 3.30...3.50
mm : 2.00
1/min : 285...345
C-rod trav.mm
C-rod trav.mm
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
             1/min : 500
Speed
            hPa : 1200
Pressure
Contr.-rod trav.mm: 13.30...13.40
Measurement
Speed
             1/min : 500
1st pressure hPa
                   : 8.80...9.00
  C-rod trav.mm
2nd pressure hPa : 800
  C-rod trav.mm : 13.10...13.20
3rd pressure hPa : 170
  C-rod trav.mm : 9.20...9.50
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
Speed 1/min: 700
Del.quantity cm3/: 138.0...142.0
             1000H.: (135.0...145.0)
STARTING FUEL DELIVERY
LOW IDLE
             1/min : 250
Speed
Contr.-rod trav.mm: 3.30...3.50
Del.quantity cm3/: 18.0...23.0
1000H.: (-)
             cm3/: 5.00
1000H.: (7.00)
Dispersion
Remarks:
Delivery-valve spring pre-tension =
```

A11

2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 12, 0 I Edition : 21.05.87 Superceeded : 25.9.86 Calibrating oil : ISO-4113

Combination no. : 0 401 846 773

Injection pump

Pump designation : PE6P12OA32ORS3116 EP type number : 0 411 826 727 Governor

Governor design. : RQV250...1025PA657 Governer no. : 0 421 813 368

Customer-spec. information Customer : VOLVO

Engine : TD 120 G

1st version kW : 242.7 Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Del.quantity cm3/: 197.0...199.0 1000H.: (194.0...202.0) Dispersion cm3/: 5.00 : 2.60...2.70 : (2.55...2.75) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 1000H.: (9.00) HIGHEST RATED SPEED 1st version SD ang. spacing  $^{\circ}$  CS: 0-60-120-180-240-300 Tolerance + -  $^{\circ}$  : 0.50 (0.75) Control-lever position degrees: 58...66 SD mark cyl. no. : 1 Testing: 1st c-rod trav.mm : 10.40 Speed 1/min : 1065...1075 2nd c-rod trav.mm : 4.00 BASIC SETTING Speed 1/min: 1125...1155 3rd c-rod trav.mm: 4.00 1/mi: 700 1st speed 4th speed 1/min: 1250 Contr.-rod trav.mm: 11.40...11.50 C-rod trav.mm : 0.00...1.00 Del.quantity cm3/ : 19.7...19.9 LOWEST RATED SPEED I 100H.: (19.4...20.2) Control-lever position degrees: 6...14 cm3/:0.5Dispersion Testing: 100H.: (0.9) 1/min : 100 Speed C-rod trav.mm min: 7.10 Speed 1/min : 250 2nd speed 1/min: 250.0 Contr.-rod trav. m: 5.6...5.8

Del.quantity cm3/: 2.2...2.6

100H.: (1.9...2.9)

Dispersion cm3/: 0.5 C-rod trav.mm : 5.60...5.80 C-rod trav.mm : 2.00 Speed 1/min : 350...410 100H.: (0.7) compensator (LDA,ADA,ALDA) (B) Setting of injection pump with externally-mounted governor 1st version Setting 1/min : 500 hPa : 700 SLEEVE TRAVELS Speed 1st speed 1/min: 200 Pressure Sleeve travel mm: 0.60...0.90 Contr.-rod trav.mm: 11.40...11.50 2nd speed 1/min: 600 Sleeve travel mm: 4.50...5.50 3rd speed 1/min: 670 Measurement Speed 1/min: 500 Sleeve travel mm: 6.40...6.60 4th speed 1/min: 930 1st pressure hPa : -C-rod trav.mm : 9.00...9.10 2nd pressure hPa : 430 Sleeve travel mm: 6.40...6.60 5th speed 1/min: 1025 C-red trav.mm : 10.80...10.90 Sleeve travel mm: 0.00...7.50 3rd pressure hPa : 230 C-rod trav.mm : 9.50...9.70 SLEEVE POSITION Control-lever position FUEL-DELIVERY CHARACTERISTICS Degree: -1 1/min: 1080 Speed Cont.-rod travelmm: 15.20...17.80 1st version Charge press. hPa : -1/min : 700 FULL-LOAD DELIV. AT FULL-LOAD STOP Speed Del.quantity cm3/: 148.0...150.0 1000H.: (145.0...153.0) 1st version Speed 1/min: 700 Charge press. hPa : 700 STARTING FUEL DELIVERY

## LOW IDLE

Delivery-valve spring pre-tension = 2.40...2.60 mm.

Permissible alteration from 2.20...2.90

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : VOL 10.0 Q4 : 12.06.87 SD mark cyl. no. : 1 Edition Superceeded : 9.3.87 BASIC SETTING Calibrating oil : ISO-4113 1st speed 1/mi: 700 Combination no. : 0 401 846 785 Contr.-rod trav.mm: 11.90...12.00 Injection pump Pump designation : PE6P110A320R\$3108 Del.quantity cm3/: 15.2...15.4 EP type number : 0 411 816 727 100H.: (14.9...15.7) Governor Governor design. : RQV250...1100PA589 : 0 421 813 307 Governer no. cm3/:0.4Dispersion 100H.: (0.7) Customer-spec. information Customer : VOLVO 1/min: 250.0 2nd speed : N10/TD101GB Contr.-rod trav. m: 4.1...4.3 Engine Del.quantity cm3/: 1.7...2.1 100H.: (1.4...2.3) TEST BENCH REQUIREMENTS cm3/: 0.3 100H.: (0.6) Dispersion Calibrating-oil inlet temp. °C : 38...42 (B) Setting of injection pump with externally-mounted governor Overflow valve : 1 417 413 025 SLEEVE TRAVELS 1st speed 1/min: 250 Inlet press., bar: 1.50 Sleeve travel mm: 1.20...1.30 2nd speed 1/min: 450
Sleeve travel mm: 3.70...4.10
3rd speed 1/min: 700
Sleeve travel mm: 6.40...6.60 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 4th speed 1/min: 1000 Sleeve travel mm: 6.40...6.60 5th speed 1/min: 1160 Test inj. tubing : 1 680 750 015 Sleeve travel mm: 8.20...8.40 SLEEVE POSITION Outside diameter x Wall thickness Control-lever position Degree: -1 1/min: 1180 x Length mm : 6.00x1.50x600 Cont.-rod travelmm: 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values 1st version 1/min: 700 START OF DELIVERY Speed Charge press. hPa: 900 Test pressure, bar: 25...27 Del.quantity cm3/: 152.0...154.0 1000H.: (149.0...157.0) Dispersion cm3/: 4.00 : 3.00...3.10 Prestroke mm : (2.95...3.15) 1000H.: (7.50) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 HIGHEST RATED SPEED 1st version

Control-lever position degrees: 59...67 Testing: 1st c-rod trav.mm : 10.90 1/min : 1160...1170 Speed 2nd c-rod trav.mm : 4.00 1/min : 1215...1245 Speed 1/min : 1350 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 4...12 Testing: 1/min : 100 Speed C-rod trav.mm min : 5.60 1/min : 250 Speed C-rod trav.mm : 4.10...4.30 : 2.00 C-rod trav.mm 1/min : 310...370 Speed compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 500 hPa : 900 Pressure Contr.-rod trav.mm: 11.90...12.00 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.10...10.20 : 550 2nd pressure hPa : 11.70...11.80 C-rod trav.mm : 350 3rd pressure hPa : 10.40...10.60 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 1000 Speed Del.quantity cm3/: 146.0...150.0 1000H.: (143.0...153.0) Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 116.0...119.0 1000H.: (113.5...121.5) STARTING FUEL DELIVERY

Del.quantity cm3/: 170.0...200.0 1000H.: (170.0...200.0)

LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 4.10...4.30 Del.quantity cm3/: 17.0...21.0

1000H.: (14.5...23.5) Dispersion cm3/: 3.00 1000H.: (6.00)

Remarks:

Speed

1/min : 100

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 9.0 E : 12.09.86 Edition

Superceeded : ISO-4113 Calibrating oil

: 0 401 846 804 Combination no.

Injection pump

Pump designation : PE6P120A320RS3141 EP type number : 0 411 826 744

Governor

Governor design. : RQV200...1100PA729-1

Governer no. : 0 421 813 470

Customer-spec. information Customer : SAAB-SCANIA

: DS9 02 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder : 1 688 901 019 assembly

Opening

: 207...210 pressure, bar

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.5Cx6GC

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY Test pressure, bar: 25...27

: 5.00...5.10 Prestroke mm

: (4.95...5.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-2-4 HIGHEST RATED SPEED 1st version Control-lever position degrees: 59...67 SD ang. spacing  $^{0}$ CS: 0-60-120-180-240-300 Tolerance + -  $^{1}$  : 0.50 (0.75) Testing: 1st c-rod trav.mm: 9.40 1/min: 1140...1150 SD mark cyl. no. : 1 Speed 2nd c-rod trav.mm: 4.00 1/min: 1235...1265 BASIC SETTING Speed 4th speed 1/min : 1350 C-rod trav.mm : 0.00...1.00 1st speed 1/mi: 700 Contr.-rod trav.mm: 10.40...10.50 LOWEST RATED SPEED I Control-lever Del.quantity cm3/: 13.2...13.4 position degrees: 3...11 100H<sub>3</sub>: (13.0...13.6) Testing: 1/min : 100 Speed C-rod trav.mm min : 5.90 Dispersion cm3/:0.6Speed 1/min: 225 C-rod trav.mm: 4.40...4.60 C-rod trav.mm: 2.00 Speed 1/min: 290...350 100H.: (0.9) 1/min: 225.0 2nd speed Contr.-rod trav. m: 4.4...4.6 Del.quantity cm3/: 1.2...1.6 FUEL-DELIVERY CHARACTERISTICS 100H.: (-) Speed 1/min : 1100 cm3/: 0.2 100H.: (0.4) Del.quantity cm3/: 143.0...151.0 Dispersion 1000H.: (141.0...153.0) (B) Setting of injection pump with externally-mounted governor STARTING FUEL DELIVERY SLEEVE TRAVELS 1st speed 1/min: 225 1/min : 100 Speed Sleeve travel mm: 0.60...0.70 Del.quantity cm3/: 290.0...340.0 2nd speed 1/min: 350 Sleeve travel mm: 2.20...2.70 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 3rd speed 1/min: 425 Sleeve travel mm: 3.60...4.20 LOW IDLE 1/min: 1150 4th speed Sleeve travel mm: 8.40...8.60 1/min : 225 Speed 5th speed 1/min: 1250 Contr.-rod trav.mm: 4.40...4.60 Sleeve travel mm: 9.30...9.60 Remarks: SLEEVE POSITION ADDITIONAL INFORMATION Control-lever position Degree: -1 17min: 1150 Speed Cont.-rod travelmm: 15.20...17.80 Delivery-valve spring pre-tension FULL-LOAD DELIV. AT FULL-LOAD STOP 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm Check and set without ROBO diaphragam 1st version 1/min: 700 Speed Del.quantity cm3/: 132.0...134.0 1000H.: (130.0...136.0) Dispersion cm3/: 6.00 1000H.: (9.00) For comb, with letter index see VDT-I-400/116. A18

For sealing see VDT-I-400/117.

Test specifications approved by Scania on December 18, 1986 Start of delivery - engine: 17° before TDC Firing sequence of engine: 1-5-3-6-2-4.

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : SCA 9,0 E 1
: 26.03.87
Test sheet
Edition
Superceeded
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 401 846 804 Q
                                                      BASIC SETTING
Combination no.
                                                      1st speed
                                                                     1/mi: 700
Injection pump
Pump designation
                    : PE6P120A320RS3141Q
EP type number
                                                      Contr.-rod trav.mm: 10.00...10.10
                    : 0 411 826 744
Governor
Governor design. : RQV200...1100PA729-1
                                                      Del.quantity cm3/: 12.8...13.0
                    : 0 421 813 470
Governer no. ~
                                                                    100H.: (12.5...13.3)
Customer-spec. information
Customer
                    : SAAB-SCANIA
                                                      Dispersion
                                                                    cm3/:0.6
Engine
                    : DS9 02
                                                                    100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                                    1/min: 225.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 4.4...4.6
                                                      Del.quantity cm3/: 1.1...1.5
100H.: (-)
Dispersion cm3/: 0.2
100H.: (0.4)
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Inlet press., bar: 1.50
                                                      SLEEVE TRAVELS
Calibrating nozzle-holder
                   : 1 688 901 019
                                                      1st speed 1/min: 225
 assembly
                                                        Sleeve travel mm: 0.60...0.70
                                                      2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.70
Opening
                    : 207...210
 pressure, bar
                                                                   1/min: 425
                                                      3rd speed
                                                        Sleeve travel mm: 3.60...4.20
Perforated-plate
                    : 0,8
                                                                   1/min: 1150
                                                      4th speed
 diameter mm
                                                        Sleeve travel mm: 8.40...8.60
                                                      5th speed 1/min: 1250
                                                        Sleeve travel mm: 9.30...9.60
                   : 1 680 750 015
Test inj. tubing
                                                      SLEEVE POSITION
Outside diameter
x Wall thickness
                                                      Control-lever position
                                                                   Degree: -1
1/min: 1150
x Length mm
                   : 6.00x1.50x600
                                                      Speed
                                                      Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
                                                                    1/min: 700
START OF DELIVERY
                                                      Speed
                                                      Del.quantity cm3/: 128.0...130.0
1000H.: (125.0...133.0)
Test pressure, bar: 25...27
                                                                   cm3/ : 6.00
                    : 5.00...5.10
                                                      Dispersion
Prestroke mm
                    : (4.95...5.15)
                                                                   1000H.: (9.00)
Contr.-rod trav.mm: 9.00...12.00
A20
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 59...67 Testing: 1st c-rod trav.mm : 9.40 Speed 1/min: 1140...1150 2nd c-rod trav.mm : 4.00 1/min : 1235...1265 Speed 1/min : 1350 4th speed : 0.00...1.00 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 3...11 Testing: 1/min : 100 Speed C-rod trav.mm min: 5.90 1/min : 225 Speed C-rod trav.mm : 4.40...4.60 : 2.00 C-rod trav.mm 1/min : 290...350 Speed FUEL-DELIVERY CHARACTERISTICS 1/min : 1100 Del.quantity cm3/: 132.0...140.0 1000H.: (130.0...142.0) STARTING FUEL DELIVERY Speed 1/min : 100
Del.quantity cm3/ : 290.0...340.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 LOW IDLE Speed 1/min : 225 Contr.-rod trav.mm: 4.40...4.60 Del.quantity cm3/: 11.0...15.0 1000H.: (-) Remarks: Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania on December 18, 1986 Start of delivery - engine: 17° before TDC Firing sequence of engine: 1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS : 1- 5- 3- 6- 2-Cam sequence Note inst. in remarks column Test sheet SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) : SCA 9.0 G : 09.03.87 Edition Superceeded Calibrating oil : ISO-4113 SD mark cyl. no. : 1 Combination no. : 0 401 846 815 BASIC SETTING Injection pump 1/mi: 700 1st speed Pump designation : PE6P120A320RS3171 Contr.-rod tray.mm: 9.00...9.10 En type number : 0 411 826 749 Governor Governor design. : RQ750PA796 Del.quantity cm3/: 11.2...11.4 : 0 421 801 345 Governer no. 100H.: (10.9...11.7) Customer-spec. information cm3/:0.5Customer : SAAB-SCANIA Dispersion : DN9 41 100H.: (0.8) Engine TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. °C Degree: 45...47 : 38...42 Speed 17min: 600 Cont.-rod travelmm: 15.20...17.80 Overflow valve : 1 417 413 025 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Inlet press., bar : 1.50 1/min: 700 Speed Del.quantity cm3/: 112.0...114.0 Calibrating nozzle-holder 1000H.: (109.0...117.0) cm3/: 5.00 : 1 688 901 019 assembly Dispersion 1000H.: (8.00) Opening pressure, bar : 207...210 HIGHEST RATED SPEED Perforated-plate 1st version diameter mm : 0.8 Control-lever position degrees: 14...22 Test inj. tubing : 1 680 750 015 Testing: 1st c-rod trav.mm : 8.00 1/min: 750...755 Outside diameter Speed 2nd c-rod trav.mm : 4.00 Speed 1/min : 769...782 x Wall thickness Speed : 6.00x1.50x600 x Length mm 1/min : 850 4th speed C-rod trav.mm : 0.00...1.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values STARTING FUEL DELIVERY START OF DELIVERY Speed 1/min: 100 Del.quantity cm3/: 290.0...340.0 1000H.: (-) Test pressure, bar: 25...27 Prestroke mm : 5.00...5.10 Contr.-rod trav.mm: 20.00...21.00 : (4.95...5.15) Contr.-rod trav.mm: 9.00...12.00 A22

HIGH IDLE
Contr.-rod trav.mm: 4.60...4.80
Dispersion cm3/: 4.00
1000H.: (7.00)

Remarks:
APPLICATION
Generator

ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. With letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania on December 6, 1986 Engine start of delivery: 18° BTDC

Firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                     Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : SCA 9,0 G 1
: 09.03.87
Edition
Superceeded
Calibrating oil
                    : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no.
                    : 9 401 846 816
                                                      BASIC SETTING
Injection pump
                                                                     1/mi: 850
                                                      1st speed
Pump designation : PE6P12OA32ORS3171
EP type number
                                                      Contr.-rod trav.mm: 9.00...9.10
                    : 0 411 826 749
Governor
Governor design.
                    : RQ900PA796-1
                                                      Del.guantity cm3/: 12.0...12.2
Governer no.
                    : 0 421 801 346
                                                                    100H.: (11.7...12.5)
Customer-spec. information
Customer
                   : SAAB-SCANIA
                                                                    cm3/:0.5
                                                      Dispersion
                    : DN 9 41
                                                                    100H.: (0.8)
Engine
TEST BENCH REQUIREMENTS
                                                      SLEEVE POSITION
                                                      Control-lever position
Calibrating-oil inlet temp. °C
                                                                   Degree: 45...47
17min: 600
                    : 38...42
                                                      Cont.-rod travelmm: 15.20...17.80
Overflow valve
                    : 1 417 413 025
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
                                                      1st version
                                                      Speed
                                                                    1/min: 850
                                                     Del.quantity cm3/: 120.0...122.0
1000H.: (117.0...125.0)
Dispersion cm3/: 5.00
1000H.: (8.00)
Calibrating nozzle-holder
 assembly
                   : 1 688 901 019
Opening
                   : 207...210
 pressure, bar
                                                     HIGHEST RATED SPEED
Perforated-plate
                                                      1st version
 diameter mm
                    : 0.8
                                                      Control-lever
                                                      position degrees: 15...23
Test inj. tubing : 1 680 750 015
                                                      Testing:
                                                      1st c-rod trav.mm : 8.00
                                                                  1/min: 900...905
Outside diameter
                                                        Speed
                                                      2nd c-rod trav.mm : 4.00
x Wall thickness
                                                                  1/min: 923...938
                   : 6.00x1.50x600
x Length mm
                                                        Speed
                                                                  1/min : 1000
                                                      4th speed
                                                                         : 0.00 ... 1.00
(A) Injection pump setting values
                                                       C-rod trav.mm
    Insp. values in parentheses
Set constant delivery quant.
    per values ____
                                                     STARTING FUEL DELIVERY
START OF DELIVERY
Test pressure, bar: 25...27
                                                      Speed
                                                                  1/min : 100
                                                     Del.quantity cm3/: 290.0...340.0
                                                     1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00
Prestroke mm
                    : 5.00...5.10
                    : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
A24
```

HIGH IDLE

Contr.-rod trav.mm: 4.50...4.70 Dispersion cm3/: 4.00 1000H.: (7.00)

Remarks:

ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see VDT-I-400/116.

for sealing see VDT-I-400/117.

Test specifications approved by Scania on December 6, 1986 Engine start of delivery: 18° BTDC

Firing sequence of engine: 1-5-3-6-2-4.

: 3.60...3.70 : (3.55...3.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 : 1-5- 3- 6- 2-Cam sequence : VOL 12.2 A : 12.06.87 Test sheet Edition Superceeded SD ang. spacing  $^{0}$ CS: 0-60-120-180-240-300 Tolerance + -  $^{0}$ : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 827 SD mark cyl. no. : 1 Injection pump Pump designation : PE6P120A320RS3178 BASIC SETTING EP type number : 0 411 826 752 1/mi: 700 Governor 1st speed Governor design. : RQV250...950PA657-11 Governer no. : 0 421 813 568 Contr.-rod trav.mm: 11.70...11.80 Del.quantity cm3/ : 21.8...22.0 Customer-spec. information Customer : VOLVO 100H.: (21.5...22.3) : TD122F Engine cm3/:0.5Dispersion : 257.0 1st version kW 1/min: 1900 100H.: (0.9) Speed 2nd speed 1/min: 250.0
Del.quantity cm3/: 1.8...2.3
100H.: (1.5...2.6)
Dispersion cm3/: 0.5 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 100H.: (0.7) Overflow valve : 1 417 413 025 SLEEVE POSITION Control-lever position Degree: -1 Inlet préss., bar : 1.50 Speed 1/min: 1040 Cont.-rod travelmm: 15.20...17.80 Calibrating nozzle-holder : 1 688 901 019 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening : 207...210 pressure, bar 1st version 1/min: 700 Speed Charge press. hPa: 700
Del.quantity cm3/: 218.5...220.5
1000H.: (215.5...223.5)
Dispersion cm3/: 5.00 Perforated-plate : 0,8 diameter mm Test inj. tubing : 1 680 750 067 1000H.: (9.00) Outside diameter HIGHEST RATED SPEED x Wall thickness 1st version Control-lever : 6.00x1.50x1000 x Length mm position degrees: 58...66 (A) Injection pump setting values Insp. values in parentheses Testing: Set constant delivery quant. 1st c-rod trav.mm : 10.70 1/min : 980...990 Speed per values 2nd c-rod trav.mm : 4.00 Speed 1/min : 1040...1070 START OF DELIVERY 1/min : 1160 Test pressure, bar: 25...27 4th speed C-rod trav.mm : 0.00...1.00 A26

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 6...14
Testing:
              1/min : 100
Speed
C-rod trav.mm min : ?
             1/min : 250
Speed
C-rod trav.mm
CONSTANT REGULATION
              1/min : 250...400
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
hPa : 700
Speed
Pressure
Contr.-rod trav.mm: 11.70...11.80
Measurement
             1/min : 500
Speed
1st pressure hPa
  C-rod trav.mm
                   : 430
2nd pressure hPa
                   : 11.50...11.60
: 75
  C-rod trav.mm
3rd pressure hPa
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
             1/min : 700
Speed
Del.quantity cm3/: 168.0...170.0
              1000H.: (165.0...173.0)
STARTING FUEL DELIVERY
             1/min : 100
Speed
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
             1/min : 250
Speed
Del.quantity cm3/: 18.0...23.0
1000H.: (15.0...26.0)
Dispersion cm3/: 5.00
1000H.: (7.00)
Remarks:
Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90
mm
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Prestroke mm : 2.60...2.70 : (2.55...2.75)
Contr.-red trav.mm: 9.00...12.00
Note inst. in remarks column
Test sheet
                    : VOL 12,1 A1 : 02.06.87
                                                        Cam sequence : 1-5-3-6-2-4
Edition
Superceeded
                    : 12.9.86
                  : ISO-4113
Calibrating oil
                                                        SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - * : 0.50 (0.75)
Combination no.
                    : 0 401 846 828
Injection pump
                                                        SD mark cyl. no. : 1
Pump designation : PE6P120A320RS3165
EP type number
                    : 0 411 826 747
                                                        BASIC SETTING
Governor
                    : RQV300...1025PA657-1
Governor design.
                                                                        1/mi: 700
                                                        1st speed
Governer no.
                    : 0 421 813 571
                                                        Contr.-rod trav.mm: 11.60...11.70
                                                        Del.quantity cm3/: 19.7...20.0
Customer-spec. information
Customer
                    : VOLVO
                                                                       100H.: (19.4...20.3)
Engine
                    : TID 121G
                                                        Dispersion
                                                                       cm3/:0.5
1st version kW : 243.0
              1/min: 2050
Speed
                                                                       100H.: (0.9)
                                                        2nd speed 1/min: 300.0
Contr.-rod trav. m: 3.7...3.9
Del.quantity cm3/: 2.2...2.6
Dispersion cm3/: 0.5
100H.: (0.7)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                     : 38...42
Overflow valve
                     : 1 417 413 025
                                                         (B) Setting of injection pump with
                                                             externally-mounted governor
Inlet press., bar : 1.50
                                                        SLEEVE TRAVELS
                                                        1st speed 1/min: 300
Sleeve travel mm: 1.70...1.80
2nd speed 1/min: 370
Sleeve travel mm: 2.60...2.90
Calibrating nozzle-holder
            : 1 688 901 019
 assembly
Opening.
 pressure, bar
                    : 207...210
                                                        3rd speed
                                                                      1/min: 430
                                                          Sleeve travei mm: 3.60...3.80
                                                        4th speed 1/min: 1080
Perforated-plate
                                                          Sleeve travel mm: 6.80...7.00
 diameter mm
                     : 0,8
                                                        5th speed 1/min: 1160
                                                          Sleeve travel mm: 8.10...8.30
                    : 1 680 750 067
Test inj. tubing
                                                        SLEEVE POSITION
Outside diameter
                                                        Control-lever position
                                                                      Degree: -1
x Wall thickness
                                                                       1/min: 1070
                    : 6.00x1.50x1000
x Length mm
                                                        Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
    Insp. values in parentheses
Set constant delivery quant.
    per values
                                                        1st version
                                                                       1/min: 700
                                                        Speed
START OF DELIVERY
                                                        Charge press. hPa : 1000
Test pressure, bar: 25...27
A28
```

Del.quantity cm3/: 197.0...200.0 1000H.: (194.0...203.0) cm3/ : 5.00 1000H.: (9.00) Dispersion HIGHEST RATED SPEED 1st version Control-lever position degrees: 53...61 Testing: 1st c-rod trav.mm : 10.60 1/min : 1085...1095 Speed 2nd c-rod trav.mm : 4.00 1/min : 1160...1190 Speed 1/min : 1300 4th speed : 0.00...1.00 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 6...14 Testing: Speed 1/min : 100 C-rod trav.mm min : 5.20 Speed 1/min: 300 C-rod trav.mm : 3.70...3.90 CONSTANT REGULATION 1/min : 300...400 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 1000 Pressure Contr.-rod trav.mm: 11.60...11.70 Measurement Speed 1/min : 500 1st pressure hPa : 10.30...10.40 C-rod trav.mm : 300 2nd pressure hPa : 11.40...11.50 C-rod trav.mm : 150 3rd pressure hPa : 10.60...10.80 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 166.0...169.0 1000H.: (163.0...172.0)

STARTING FUEL DELIVERY

1/min : 100 Del.quantity cm3/: 240.0...280.0 Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min: 300 Contr.-rod trav.mm: 3.70...3.90 Del.quantity cm3/: 22.0...26.0

cm3/ : 5.00 Dispersion 1000H.: (7.00)

Delivery-valve spring pre-tension = 2.40...2.60 mm. Permissible alteration from 2.20...2.90

```
: 4.00...4.10
: (3.95...4.15)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Prestroke mm
Note inst. in remarks column
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 6- 5- 5- 2-
                                                                                              4- 1
Test sheet
                   : MB 11,0 S 3
Edition
                   : 09.03.87
Superceeded
                   : 12.9.86
                                                       SD ang. spacing ^{\circ} CS: 0-45-120-165-240-285 Tolerance + - ^{\circ} : 0.50 (0.75)
Calibrating oil : ISO-4113
                    : 0 401 846 830
Combination no.
                                                       SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3835
                                                       BASIC SETTING
EP type number : 0 411 816 749
                                                                     1/mi: 950
Governor
                                                        1st speed
Governor design. : RQV300...950PA829K
                                                        Contr.-rod trav.mm: 13.10...13.20
Governer no. : 0 421 815 166
                                                       Delaquantity cm3/: 12.6...12.8
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                      100H.: (12.3...13.0)
Engine
                    : 0M441
                                                                      cm3/:0.4
                                                       Dispersion
1st version kW : 150.0
                                                                      100H.: (0.8)
Speed
              1/min: 1900
TEST BENCH REQUIREMENTS
                                                       2nd speed
                                                                      1/min: 300.0
                                                       Contr.-rod trav. m: 8.8...8.9
Del.quantity cm3/: 1.5...2.1
100H.: (1.2...2.3)
Dispersion cm3/: 0.4
100H.: (0.7)
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                     : 1 417 413 025
                                                        (B) Setting of injection pump with
Inlet press., bar : 1.50
                                                            externally-mounted governor
                                                       SLEEVE TRAVELS
Over flow
                                                       1st speed 1/min: 300
Sleeve travel mm: 1.10...1.30
2nd speed 1/min: 500
 quantity min. 1/h: 100...120
Calibrating nozzle-holder
                   : 0 681 343 009
                                                          Sleeve travel mm: 3.20...3.40
 assembly
                                                                     1/min: 800
                                                       3rd speed
                                                          Sleeve trave: mm: 5.90...6.10
Opening
 pressure, bar : 172...175
                                                        4th speed 1/min: 1000
                                                       Sleeve travel mm: 8.00...8.40

Sth speed 1/min: 1125

Sleeve travel mm: 9.60...10.00
Test inj. tubing : 1 680 750 015
                                                       SLEEVE POSITION
Outside diameter
                                                       Control-lever position
x Wall thickness
                    : 6.00x1.50x600
x Length mm
                                                                     Degree: -1
                                                       Speed
                                                                     17min: 975
                                                       Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                       1st version
                                                                      1/min: 950
START OF DELIVERY
                                                       Speed
                                                       Del.quantity cm3/: 126.0...128.0
Test pressure, bar: 25...27
                                                                     1000H.: (123.5...130.5)
802
```

```
Dispersion cm3/ : 4.00
             1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 57...65
Testing:
1st c-rod trav.mm : 12.10
             1/min: 990...1000
  Speed
2nd c-rod trav.mm : 4.00
             1/min : 1080...1110
  Speed
             1/min : 1300
4th speed
  C-rod tray.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 9...17
Testing:
Speed
             1/min : 100
C-rod trav.mm min : 10.60
            1/min : 300
Speed
C-rod trav.mm
                   : 8.80...9.00
CONSTANT REGULATION
             1/min : 300...450
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 975
1st speed
  C-rod trav.mm : 13.10...13.20
             1/min : 600
2nd speed
  C-rod trav.mm : 12.90...13.10
3rd speed 1/min: 750
  C-rod trav.mm : 13.10...13.30
SWITCH-OVER POINT
Speed
             1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/: 117.0...120.0
1000H.: (114.0...123.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Speed 1/min: 750
Del.quantity cm3/: 120.0...124.0
1000H.: (117.0...127.0)
              cm3/:6.00
Dispersion
             1000H.: 9.00
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 120.0...140.0
             1000H.: (116.0...144.0)
```

B03

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : DAF 11,7 D : 12.09.86

Calibrating oil : ISO-4113

Combination no. : 0 401 846 831

Injection pump

Pump designation : PE6P12OA32ORS3183 EP type number : 0 411 826 754

Governor

Governor design. : RQ250/1000PA832 Governer no. : 0 421 801 368

Customer-spec. information Customer : DAF

: WS 270 Engine

1st version kW : 265.0 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening.

pressure, bar : 207...210

Perforated-plate

: 0.8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 3.70...3.80 Prestroke mm : (3.65...3.85) LOWEST RATED SPEED I Setting point w/out aux. spring Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 Speed 1/min: 250 Contr.-rod trav.mm: 7.0 Testing: SD ang. spacing  $^{\circ}$  CS: 0-60-120-180-240-300 Tolerance + -  $^{\circ}$  : 0.50 (0.75) 1/min : 100 Speed C-rod trav.mm min: 8.50 Speed 1/min: 250 C-rod trav.mm: 6.90...7.10 C-rod trav.mm: 2.00 BASIC SETTING mm : 2.00 1/min : 350...390 1st speed 1/mi: 850 Speed Contr.-rod trav.mm: 13.00...13.10 TORQUE CONTROL Dimension a mm Del.quantity cm3/ : 21.7...21.9 Torque-control curve - 1st version 1st speed 1/min: 850 C-rod trav.mm : 13.30...13.40 2nd speed 1/min : 1000 100H.: (21.4...22.2) C-rod trav.mm : 13.20...13.40 cm3/:0.5Dispersion 100H.: (0.9) compensator (LDA,ADA,ALDA) 1/min: 250.0 2nd speed Contr.-rod trav. m: 6.7...6.9 1st version Del.quantity cm3/: 1.6...2.2 100H:: (1.3...2.5) Dispersion cm3/: 0.8 100H:: (1.2) Setting 1/min : 600 Speed Pressure hPa : 1000 Contr.-rod tray.mm: 13.00...13.10 SLEEVE POSITION Measurement 1/min : 600 Control-lever position Speed Degree: -1 17min: 550 1st pressure hPa : -Cont.-rod travelmm: 15.60...16.40 C-rod trav.mm : 10.10...10.30 2nd pressure hPa : 650 C-rod trav.mm : 12.40...12.50 3rd pressure hPa : 390\_ C-rod trav.mm FULL-LOAD DELIV. AT FULL-LOAD STOP C-rod trav.mm : 10.70...11.00 1st version 1/min: 850 Speed Charge press. hPa : 1000 FUEL-DELIVERY CHARACTERISTICS Del.quantity cm3/: 217.0...219.0 1000H.: (214.0...222.0) Dispersion cm3/: 5.00 1000H.: (9.00) Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) HIGHEST RATED SPEED STARTING FUEL DELIVERY Setting point: Speed 1/min : 550 Contr.-rod trav.mm: 16.0 1/min : 100 Del.quantity cm3/: 260.0...300.0 1000H.: (256.0...304.0) Testing: 1st c-rod trav.mm : 12.00 Speed 1/min : 1035...1050 2nd c-rod trav.mm : 4.00 LOW IDLE Speed 1/min: 1160...1190 1/min : 250 Speed Contr.-rod trav.mm: 6.90...7.10 4th speed 1/min: 1250 C-rod trav.mm : 0.00...1.00

**B05** 

Del.quantity cm3/: 14.0...20.0 1000H.: (11.0...23.0) Dispersion cm3/: 8.00 1000H.: (12.00)

Remarks:

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : DAF 11,7 D1 : 15.05.87

Calibrating oil : ISO-4113

Combination no. : 0 401 846 831

Injection pump

Pump designation : PE6P12OA32ORS3183-1Y

EP type number : 0 411 826 765

Governor

Governor design. : RQ250/1000PA832 Governmen no. : 0 421 801 368

Customer-spec. information Customer : DAF

Engine : WS 282

1st version kW : 282.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80 : (3.65...3.85) LOWEST RATED SPEED I Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 Setting point w/out aux. spring Speed 1/min: 250 Contr.-rod trav.mm: 7.0 Testing: SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) 1/min: 100 Speed C-rod trav.mm min: 8.50 1/min : 250 Speed C-rod trav.mm : 6.90...7.10 C-rod trav.mm : 2.00 BASIC SETTING mm : 2.00 1/min : 350...390 1/mi: 850 Speed 1st speed Contr.-rod trav.mm: 13.10...13.20 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 850 Del.quantity cm3/ : 21.9...22.1 C-rod trav.mm : 13.30...13.40 100H.: (21.6...22.4) 2nd speed 1/min: 1000 C-rod trav.mm : 13.20...13.40 cm3/:0.5Dispersion compensator (LDA, ADA, ALDA) 100H.: (0.9) 2nd speed 1/min: 250.0 1st version Contr.-rod trav. m: 6.9...7.1 Setting Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) Dispersion cm3/: 0.8 100H.: (1.2) 1/min : 600 Speed hPa : 1000 Pressure Contr.-rod trav.mm: 13.10...13.20 Measurement 1/min : 600 SLEEVE POSITION Speed Control-lever position Degree: -1 1/min: 550 1st pressure hPa : -C-rod trav.mm : 10.10...10.30 2nd pressure hPa : 650 Cont.-rod traveimm: 15.60...16.40 : 12.40...12.50 C-rod trav.mm FULL-LOAD DELIV. AT FULL-LOAD STOP 3rd pressure hPa : 390 C-rod trav.mm : 10.70...11.00 1st version Speed 1/min: 850 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : 1000 Charge press. hPa : -Del.quantity cm3/: 219.0...221.0 1000H.: (216.0...224.0) Dispersion cm3/: 5.00 1000H.: (9.00) 1/min: 600 Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) STARTING FUEL DELIVERY HIGHEST RATED SPEED Setting point: 1/min : 100 1/min : 550 Speed ` Speed Del.quantity cm3/ : 260.0...300.0 Contr.-rod trav.mm: 16.0 1000H.: (256.0...304.0) Testing: 1st c-rod trav.mm : 12.10 Speed 1/min : 1035...1050 LOW IDLE 1/min : 250 2nd c-rod trav.mm : 4.00 Speed Contr.-rod trav.mm: 6.90...7.10 Del.quantity cm3/: 14.0...20.0 Speed 1/min : 1120...1150 4th speed 1/min : 1250 1000H.: (11.0...23.0) C-rod trav.mm : 0.00...1.00

**B08** 

Dispersion cm3/: 8.00 1900H.: (12.00)

Note inst. in remarks column

Test sheet Edition Superceeded : MB 11.0 L 1 : 05.11.86

Calibrating oil : ISO-4113

Combination no. : 0 401 846 832

Injection pump

Pump designation : PE6P12OA320LS3815-11

EP type number : 0 411 826 826

Governor

Governor design. : RQ300/1050PA840 Governer no. : 0 421 801 374

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 441 A Engine

1st version kW : 191.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-cil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening |

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

Speed 1/min: 000 Charge press. hPa: 1100 Del.quantity cm3/: 190.0...192.0 1000H.: (187.0...195.0) START OF DELIVERY Test pressure, bar: 25...27 : 3.60...3.70 Prestroke mm : (3.55...3.75) 1000H .: (9.0L Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 6-3-5-2-4-1 HIGHEST RATED SPEED Setting point: SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75) Speed 1/min : 600 Contr.-rod trav.mm: 20.0 SD mark cyl. no. : 6 Testing: 1st c-rod trav.mm : 11.40 1/min: 1095...1110 BASIC SETTING Speed 2nd c-rod trav.mm : 4.00 1/min : 1200...1230 1st speed 1/mi: 600 Speed 1/min : 1350 4th speed Contr.-rod trav.mm: 13.10...13.30 C-rod trav.mm : 0.00...1.50 Del.quantity cm3/: 19.0...19.2 LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 325 100H.: (18.7...19.5) Speed Contr.-rod trav.mm: 5.5 Dispersion cm3/:0.5Testing: 100H.: (0.9) 1/min : 100 Speed C-rod trav.mm min : 6.90 Speed 1/min: 325 C-rod trav.mm: 5.40...5.60 C-rod trav.mm: 2.00 Speed 1/min: 340...380 2nd speed 1/min: 325.0 Contr.-rod trav. m: 5.4...5.6 Del.quantity cm3/: 1.4...2.2 100H.: (1.1...2.5) cm3/: 0.8 100H.: (1.2) Dispersion TORQUE CONTROL Dimension a mm : 0.90 2nd speed 1/min : 1050 C-rod trav.mm : 12.30...12.50 (B) Setting of injection pump with externally-mounted governor 3rd speed 1/min: 700 C-rod trav.mm : 13.50...13.70 SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 2.00...2.20 compensator (LDA, ADA, ALDA) 2nd speed 1/min: 600
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 900
Sleeve travel mm: 6.60...6.80 1st version Setting 4th speed 1/min: 1100 Sleeve travel mm: 7.00...7.40 1/min : 600 hPa : 700 Speed Pressure 5th speed 1/min: 1175 Contr.-rod trav.mm: 13.10...13.30 Sleeve travel mm: 9.30...10.00 Measurement 1/min: 600 SLEEVE POSITION Speed Control-lever position 1st pressure hPa : 350 Degree: -2 C-rod trav.mm : 11.20...11.40 17min: 600 Speed 2nd pressure hPa : 550 Cont.-rod travelmm: 19.20...20.80 C-rod trav.mm : 12.40...12.60 3rd pressure hPa : 780 FULL-LOAD DELIV. AT FULL-LOAD STOP C-rod trav.mm : 13.20...13.30 4th pressure hPa : 1100 1st version

**B11** 

```
: 13.45...13.55
  C-rod trav.mm
SWITCH-OVER POINT
Speed
               1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1100
Speed 1/min : 1050
Del.quantity cm3/: 184.0...187.0
1000H.: (181.0...190.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
Charge press. hPa: 1100
Speed 1/min: 700
Del.quantity cm3/: 204.0...208.0
                1000H.: (201.0...211.0)
                cm3/: 8.00
1000H.: 12.00
Dispersion
Charge press. hPa:
Speed 1/min: 500
Del.quantity cm3/: 129.0...131.0
                1000H.: (126.0...134.0)
cm3/: 8.00
Dispersion
                1000H.: (-)
STARTING FUEL DELIVERY
                1/min : 100
```

Speed Del.quantity cm3/: 190.0...210.0 1000H.: (186.0...214.0)

Remarks:

Note inst. in remarks column

Test sheet Edition : MB 11,0 L 2 : 10.12.86

Superceeded

Calibrating oil : ISO-4113

: 0 401 846 832 Combination no.

Injection pump

: PE6P12OA320LS3815-11 Pump designation

EP type number : 0 411 826 755

Governor

Governor design. : RQ325/1050PA840 Governer no. : 0 421 801 374

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 441 A Engine

1st version kW : 191.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Over flow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY 1/min: 600 Charge press. hPa: 700
Del.quantity cm3/: 190.0...192.0
1000H.: (187.0...195.0)
Dispersion cm3/: 5.00 Test pressure, bar: 25...27 : 3.60...3.70 Prestroke mm : (3.55...3.75) 1000H.: (9.00) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 6- 3- 5- 2- 4- 1 HIGHEST RATED SPEED Setting point: SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75) 1/min : 600 Speed Contra-rod trav.mm: 20.0 SD mark cyl. no. : 6 Testing: 1st c-rod trav.mm : 11.40 1/min : 1095...1110 BASIC SETTING Speed 2nd c-rod trav.mm: 4.00 1/min: 1200...1230 1st speed 1/mi: 600 Speed 1/min : 1350 4th speed Contr.-rod\_tray.mm: 13.10...13.30 C-rod trav.mm : 0.00...1.50 Del.quantity cm3/ : 19.0...19.2 LOWEST RATED SPEED I Setting point w/out aux. spring 100H.: (18.7...19.5) 1/min : 325 Speed Contr.-rod trav.mm: 5.5 Dispersion cm3/:0.5Testing: 100H.: (0.9) 1/min : 100 Speed C-rod trav.mm min: 6.90 2nd speed 1/min: 325.0 Contr.-rod trav. m: 5.4...5.6 Del.quantity cm3/: 1.4...2.2 100H.: (1.1...2.5) Dispersion cm3/: 0.8 Speed 1/min: 325 C-rod trav.mm : 5.40...5.60 C-rod trav.mm : 2.00 Speed 1/min: 340...380 100H.: (1.2) TORQUE CONTROL Dimension a mm : 0.90 2nd speed 1/min: 1050 C-rod trav.mm: 12.30...12.50 3rd speed 1/min: 700 (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS C-rod trav.mm : 13.50...13.70 1st speed 1/min: 300 Sleeve travel mm: 2.00...2.20 compensator (LDA,ADA,ALDA) 2nd speed 1/min: 600 Sleeve travel mm: 5.90...6.10
Srd speed 1/min: 900
Sleeve travel mm: 6.60...6.80
4th speed 1/min: 1100
Sleeve travel mm: 7.00...7.40 1st version Setting 1/min : 600 Speed hPa : 700 Pressure Contr.-rod trav.mm: 13.10...13.30 5th speed 1/min: 1175 Sleeve travel mm: 9.50...10.00 Measurement 1/min : 600 SLEEVE POSITION Speed Control-lever position 1st pressure hPa : 350 Degree: -1 : 11.20...11.40 17min: 600 C-rod trav.mm Speed Cont.-rod travelmm: 19.20...20.80 2nd pressure hPa : 550 C-rod trav.mm : 12.40...12.60 FULL-LOAD DELIV. AT FULL-LOAD STOP 3rd pressure hPa : 780 C-rod trav.mm : 13.20...13.30 4th pressure hPa : 1100 1st version **B14** 

```
: 13.45...13.55
  C-rod trav.mm
SWITCH-OVER POINT
Speed
            1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1100
Speed
            1/min : 1050
Del.quantity cm3/: 184.0...187.0
            1000H.: (181.0...190.0)
             cm3/:8.00
Dispersion
            1000H.: (12.0)
Charge press. hPa : 1100
            1/min : 700
Speed
Del.quantity cm3/: 204.0...208.0
            1000H.: (201.0...211.0)
             cm3/: 8.00
Dispersion
            1000H.: (12.0)
Charge press. hPa : -
Speed
            1/min : 500
Del.quantity cm3/: 129.0...131.0
            1000H.: (126.0...134.0)
             cm3/ : 8.00
Dispersion
            1000H.: (-)
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 190.0...210.0
            1000H.: (186.0...214.0)
```

Remarks:

Note inst. in remarks column

Test sheet : DAF 11.7 D2 Edition : 22.05.87 Superceeded : -

Calibrating oil : ISO-4113

Combination no. : 0 401 846 835

Injection pump

Pump designation : PE6P12OA32ORS3183-1

EP type number : 0 411 826 758

Governor

Governor design. : RQ250/1000PA832 Governer no. : 0 421 801 368

Customer-spec. information Customer : DAF

Engine : WS 259

1st version kW : 259.0 Speed 1/min: 2000

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly ` : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 3.70...3.80 Prestroke mm : (3.65...3.85) LOWEST RATED SPEED I Setting point w/out aux. spring Contr.-rod trav.mm: 9.00...12.00 : 1-5-3-6-2-4 Speed 1/min : 250 Cam sequence Contr.-rod trav.mm: 7.3 Testing: SD ang. spacing  $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) 1/min : 100 Speed C-rod trav.mm min: 8.80 Speed 1/min: 250 C-rod trav.mm: 7.20...7.40 C-rod trav.mm: 2.00 Speed 1/min: 350...390 BASIC SETTING 1/mi: 850 1st speed Contr.-rod trav.mm: 12.60...12.70 TORQUE CONTROL Torque-control curve - 1st version Del.quantity cm3/: 20.0...20.2 1st'speed 1/min: 850 C-rod trav.mm : 12.60...12.70 2nd speed 1/min : 1000 100H.: (19.7...20.5) C-rod tray.mm : 12.50...12.70 cm3/:0.5Dispersion compensator (LDA,ADA,ALDA) 100H.: (0.9) 2nd speed 1/min: 250.0 Contr.-rod trav. m: 7.2...7.4 Del.quantity cm3/: 1.6...2.2 100H.: (1.3...2.5) Dispersion cm3/: 0.8 1st version Setting 1/min : 600 Speed Pressure hPa : 1000 Contr.-rod trav.mm: 12.60...12.70 100H.: (1.2) Measurement 1/min : 600 SLEEVE POSITION Speed Control-lever position Degree: -1 1st pressure hPa : -Speed 17min: 550 Cont.-rod travelmm: 15.60...16.40 C-rod trav.mm : 10.60...10.80 2nd pressure hPa : 510 C-rod trav.mm : 12.10...12.20 3rd pressure hPa : 360 FULL-LOAD DELIV. AT FULL-LOAD STOP C-rod trav.mm : 11.00...11.20 1st version 1/min: 850 FUEL-DELIVERY CHARACTERISTICS Speed Charge press. hPa : -Charge press. hPa : 1000 Del.quantity cm3/: 200.0...202.0 1000H.: (197.0...205.0) Dispersion cm3/: 5.00 1000H.: (9.00) Speed 1/min : 600 Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) HIGHEST RATED SPEED STARTING FUEL DELIVERY Setting point: Speed 1/min : 550 Speed 1/min : 100 Del.quantity cm3/: 260.0...300.0 1000H.: (256.0...304.0) Contr.-rod trav.mm: 16.0 Testing: 1st c-rod trav.mm : 11.60 Speed 1/min : 1035...1050 2nd c-rod trav.mm : 4.00 LOW IDLE Speed 1/min: 250 Contr.-rod trav.mm: 7.20...7.40 1/min : 1125...1155 Speed Del.quantity cm3/ : 16.0...22.0 4th speed 1/min : 1250 C-rod trav.mm : 0.00...1.00 1000H<sub>a</sub>: (13.0...25.0) **B17** 

Dispersion cm3/: 8.00 1000H.: (12.00)

Remarks:

Note inst. in remarks column

Test sheet Edition : VOL 10,0 T : 09.03.87

Superceeded

Calibrating oil : ISO-4113

: 0 401 846 838 Combination no.

Injection pump

Pump designation : PE6P110A320RS3152

EP type number : 0 411 816 746

Governor

Governor design. : RQV250...1100PA589 Governor no. : 0 421 813 307

Customer-spec. information Customer : VOLVO-BM

: TD102 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 3.50...3.60 Prestroke mm

: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 5- 3- 6- 2-

```
Control-lever
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                           position degrees: 59...67
                                                          Testing:
SD mark cyl. no. : 1
                                                           1st c-rod trav.mm : 12.00
                                                             Speed 1/min: 1160...1170
BASIC SETTING
                                                          2nd c-rod trav.mm : 4.00
                                                                       1/min: 1220...1250
                                                             Speed
                                                                        1/min : 1350
                 1/mi: 700
1st speed
                                                           4th speed
                                                             C-rod trav.mm : 0.00...1.00
Contr.-rod trav.mm: 13.00...13.10
                                                          LOWEST RATED SPEED I
Del.quantity cm3/: 17.5...17.7
                                                          Control-lever
                                                           position degrees: 5...13
                100H.: (17.2...18.0)
                                                          Testing:
               cm3/: 0.4
Dispersion
                                                          Speed
                                                                        1/min : 100
                                                          C-rod trav.mm min : 5.40
Speed 1/min : 250
                100H.: (0.7)
                                                                             : 3.90...4.10
                                                          C-rod trav.mm
2nd speed 1/min: 250.0
Contr.-rod trav. m: 3.9...4.1
Del.quantity cm3/: 1.5...1.9
                                                          CONSTANT REGULATION
                                                                        1/min : 250...360
                                                          Speed
                100H.: (-)
               cm3/: 0.4
100H.: (0.7)
Dispersion
                                                           compensator (LDA,ADA,ALDA)
(B) Setting of injection pump with externally-mounted governor
                                                          1st version
                                                          Setting
                                                                        1/min : 500
                                                          Speed
SLEEVE TRAVELS
                                                          Pressure
                                                                       hPa : 1000
1st speed 1/min: 250
                                                          Contr.-rod trav.mm: 13.00...13.10
  Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.70
3rd speed 1/min: 450
Sleeve travel mm: 3.70...4.10
4th speed 1/min: 750
                                                          Measurement
                                                                        1/min : 500
                                                          Speed
                                                          1st pressure hPa : -
                                                                                : 11.50...11.60
                                                            C-rod trav.mm
  Sleeve travel mm: 6.40...6.60
                                                          2nd pressure hPa : 480
                                                             C-rod trav.mm : 12.80...12.90
5th speed 1/min: 1160
                                                          3rd pressure hPa : 340
  Sleeve travel mm: 8.10...8.30
                                                             C-rod trav.mm : 11.80...12.00
SLEEVE POSITION
                                                          FUEL-DELIVERY CHARACTERISTICS
Control-lever position
                                                          Charge press. hPa : -
Speed 1/min : 700
              Degree: -1
1/min: 1180
                                                          Del.quantity cm3/: 152.0...154.0
Cont.-rod travelmm: 15.20...17.80
                                                                         1000H.: (149.0...157.0)
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
                                                          STARTING FUEL DELIVERY
               1/min: 700
Speed
Charge press. hPa: 1000
Del.quantity cm3/: 175.0...177.0
1000H.: (172.0...180.0)
Dispersion cm3/: 4.00
                                                          Speed 1/min: 100
Del.quantity cm3/: 160.0...190.0
                                                          1000H.: (156.0...194.0)
Contr.-rod trav.mm: 20.00...21.00
              1000H.: (7.50)
HIGHEST RATED SPEED
                                                          LOW IDLE
1st version
```

**B20** 

Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.

Permissible alteration from 2.20...2.90

mm

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 3.70...3.80 : (3.65...3.85) Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column Cam sequence : 1-5-3-6-2-4 Test sheet : DAF 11.7 E : 10.04.87 Edition Superceeded SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 839 BASIC SETTING Injection pump Pump designation : PE6P12OA32ORS3183 1/mi: 850 1st speed EP type number : 0 411 826 754 Governor Contr.-rod trav.mm: 13.10...13.20 Governor design. : RQV250...1000PA851 Governer no. : 0 421 813 604 Del.quantity cm3/ : 21.9...22.1 Customer-spec. information 100H.: (21.6...22.4) Customer : DAF cm3/:0.5Dispersion : WS 225 Engine 100H.: (0.9) 1st version kW : 225.0 1/min: 250.0 Speed 1/min: 2000 2nd speed Contr.-rod trav. m: 6.8...7.0 TEST BENCH REQUIREMENTS Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) cm3/: 0.8 100H.: (1.2) Calibrating-oil inlet temp. °C Dispersion : 38...42 Overflow valve (B) Setting of injection pump with : 1 417 413 025 externally-mounted governor SLEEVE TRAVELS Inlet press., bar : 1.50 1st speed 1/min: 250 Calibrating nozzle-holder Sleeve travel mm: 1.30...1.70 2nd speed 1/min: 400 Sleeve travel mm: 3.20...3.60 3rd speed 1/min: 800 : 1 688 901 019 assembly Opening pressure, bar : 207...210 Sleeve travel mm: 5.80...6.20 4th speed 1/min: 1000 Sleeve travel mm: 7.90...8.10 Perforated-plate : 0.8 diameter mm SLEEVE POSITION Control-lever position Test inj. tubing : 1 680 750 067 Degree: -1 1/min: 1040 Cont.-rod travelmm: 15.20...17.80 Outside diameter x Wall thickness FULL-LOAD DELIV. AT FULL-LOAD STOP : 6.00x1.50x1000 x Length mm (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. 1/min: 850 Speed Charge press. hPa: 1000 Del.quantity cm3/: 219.0...221.0 1000H.: (216.0...224.0) per values cm3/ : 5.00START OF DELIVERY Dispersion 1000H.: (9.00) Test pressure, bar: 25...27 B22

HIGHEST RATED SPEED 1st version Control-lever position degrees: 51...59 Testing: 1st c-rod trav.mm : 12.10 Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 1/min: 1130...1160 Speed 4th speed 1/min : 1250 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 15...23 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.40 1/min : 250 Speed C-rod trav.mm : 6.80...7.00 CONSTANT REGULATION 1/min : 275...385 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 600 Speed Pressure hPa : 1000 Contr.-rod trav.mm: 13.10...13.20 Measurement 1/min : 600 Speed 1st pressure hPa : -: 10.20...10.40 C-rod trav.mm 2nd pressure hPa : 650 C-rod trav.mm : 12.40...12.50 3rd pressure hPa : 390 C-rod trav.mm : 10.60...10.90 SWITCH-OVER POINT Speed 1/min : 200 (220) FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) STARTING FUEL DELIVERY Speed 1/min : 100

**B23** 

Del.quantity cm3/: 260.0...300.0 1000H.: (256.0...304.0)

LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 6.80...7.00 Del.quantity cm3/: 14.0...20.0 1000H.: (11.0...23.0)

Dispersion cm3/: 8.00 1000H.: (12.00)

Remarks:

Note inst. in remarks column

Test sheet Edition Superceeded : DAF 11,7 E1 : 15.05.87

Calibrating oil : ISO-4113

Combination no. : 0 401 846 839

Injection pump

Pump designation : PE6P12OA32OR\$3183-1Y

EP type number : 0 411 826 765

Governor

Governor design. : RQV250...1000PA851

Governer no. : 0 421 813 604

Customer-spec. information Customer : DAF

: WS 282 Engine

1st version kW : 282.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

K Wall thickness

: 6.00x1.50x1000 Length mm

(r Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 3.70...3.80 Prestroke mm HIGHEST RATED SPEED : (3.65...3.85) 1st version Contr.-rod trav.mm: 9.00...12.00 Control-lever Cam sequence : 1-5- 3- 6- 2- 4 position degrees: 51...59 Testing: 1st c-rod trav.mm : 12.10 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Speed 1/min: 1040...1050 2nd c-rod trav.mm: 4.00 1/min : 1130...1160 1/min : 1250 BASIC SETTING 4th speed C-rod trav.mm : 0.00...1.00 1st speed 1/mi: 850 LOWEST RATED SPEED I Contr.-rod trav.mm: 13.10...13.20 Control-lever position degrees: 15...23 Del.quantity cm3/: 21.9...22.1 Testing: Speed 1/min: 100 C-rod trav.mm min: 8.40 100H.: (21.6...22.4) cm3/ : 0.5 Dispersion Speed 1/min : 250 : 6.80...7.00 C-rod trav.mm 100H.: (0.9) CONSTANT REGULATION 1/min : 275...385 1/min: 250.0 Speed 2nd speed Contr.-rod trav. m: (.8...7.0 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) Dispersion cm3/: 0.8 compensator (LDA, ADA, ALDA) 100H.: (1.2) 1st version Setting 1/min : 600 (B) Setting of injection pump with Speed hPa : 1000 Pressure externally-mounted governor Contr.-rod trav.mm: 13.10...13.20 SLEEVE TRAVELS 1st speed 1/min: 250 Sleeve travel mm: 1.30...1.70 Measurement 1/min : 600 Speed 2nd speed 1/min: 400 Sleeve travel mm: 3.20...3.60 1st pressure hPa : -3rd speed 1/min: 800 C-rod trav.mm : 10.20...10.40 2nd pressure hPa : 650 Sleeve travel mm: 5.80...6.20 4th speed 1/min: 1000 Sleeve travel mm: 7.90...8.10 C-rod trav.mm : 12.40...12.50 3rd pressure hPa : 390 C-rod trav.mm : 10.60...10.90 SLEEVE POSITION SWITCH-OVER POINT Control-lever position Degree: -1 1/min : 200 (220) Speed 17min: 1040 FUEL-DELIVERY CHARACTERISTICS Cont.-rod travelmm: 15.20...17.80 Charge press. hPa : -FULL-LOAD DELIV. AT FULL-LOAD STOP 1/min : 600 Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) 1st version Speed 1/min: 850 Charge press. hPa : 1000 Del.quantity cm3/: 219.0...221.0 1000H.: (216.0...224.0) Dispersion cm3/: 5.00 1000H.: (9.00) STARTING FUEL DELIVERY Speed 1/min: 100

Del.quantity cm3/: 260.0...300.0 1000H.: (256.0...304.0)

## LOW IDLE

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks co'umn

: DAF 11.7 E2 : 13.05.87 Test sheet Edition Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 401 846 840

Injection pump

Pump designation : PE6P12OA32OR\$3183-1Z

EP type r mber : 0 411 826 760 Governor

Governor design. : RQV250...1000PA851-1 Governer no. : 0 421 813 605

Customer-spec. information Customer

: WS 225 Engine

1st version kW : 225.0 1/min: 2000 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp: °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder assembly : 1 688 901 019

Opening pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.70...3.80 HIGHEST RATED SPEED : (3.65...3.85) 1st version Contr.-rod trav.mm: 9.00...12.00 Control-lever Cam sequence : 1- 5- 3- 6- 2- 4 position degrees: 50...58 Testing: 1st c-rod trav.mm : 10.30 Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 SD ang. spacing CS: 0-50-120-180-240-300 Tolerange + - : 0.50 (0.75) Speed 1/min : 1120...1150 4th speed 1/min: 1250 BASIC SETTING C-rod trav.mm : 0.00...1.00 1st speed 1/mi: 850 LOWEST RATED SPEED I Contr.-rod trav.mm: 11.30...11.40 Control-lever position degrees: 15...23 Del.quantity cm3/ : 18.1...18.3 Testing: 100H.: (17.8...18.6) Speed 1/min : 100 C-rod trav.mm min : 8.10 Dispersion cm3/:0.5Speed 1/min: 250 C-rod trav.mm : 6.50...6.70 100H.: (0.9) CONSTANT REGULATION 2nd speed 1/min: 250.0 Contr.-rod trav. m: 6.5...6.7 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) 1/min : 275...385 Speed compensator (LDA,ADA,ALDA) cm3/: 0.8 100H.: (1.2) Dispersion 1st version Setting (B) Setting of injection pump with externally-mounted governor 1/min : 600 Speed Pressure hPa : 1000 Contr.-rod trav.mm: 11.30...11.40 SLEEVE TRAVELS 1st speed 1/min: 250 Measurement Sleeve travel mm: 1.30...1.70 1/min : 600 Speed 2nd speed 1/min: 400 Sleeve travel mm: 3.20...3.60 1st pressure hPa : -3rd speed 1/min: 800 C-rod trav.mm : 10.10...10.30 Sleeve travel mm: 5.80...6.20 4th speed 1/min: 1000 Sleeve travel mm: 7.90...8.10 2nd pressure hPa : 410 C-rod trav.mm : 11.00...11.10 3rd pressure hPa : 340\_\_\_\_\_ C-rod trav.mm : 10.50...10.70 SLEFYS POSITION Control-lever position FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Degree: -1 17min: 1040 1/min : 600 Speed Speed Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version STARTING FUEL DELIVERY Speed 1/min: 850 Charge press. hPa : 1000 Del.quantity cm3/: 181.0...183.0 1000H.: (178.0...186.0) Dispersion cm3/: 5.00 1/min : 100 Speed Del.quantity cm3/: 260.0...300.0 1000H.: (256.0...304.0) 1000H.: (9.00) LOW IDLE **B28** 

Remarks:

Note inst. in remarks column

Test sheet : UNI 13.8 C Edition : 30.03.87 Superceeded : -

Calibrating oil : ISO-4113

Combination no. : 0 401 846 845

Injection pump

Pump designation : PE6P12OA72ORS3192

EP type number : 0 411 826 761

Governor

Governor design. : RQV300...900PA857

Governer no. : 0 421 813 613

Customer-spec. information

Customer : IVECO-UNIC

: 8210.42.101-115 Engine

1st version kW : 265.0 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening.

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.40...3.50 : (3.35...3.55) Contr.-rod trav.mm: 9.00...12.00 Dispersion cm3/ : 5.00 1000H.: (9,00) Cam sequence : 1- 5- 3- 6- 2- 4 HIGHEST RATED SPEED 1st version Control-lever position degrees: 57...65 SD ang. spacing  $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + -  $^{\circ}$ : 0.50 (0.75) Testing: 1st c-rod trav.mm : 12.50 Speed 1/min: 940...950 SD mark cyl. no. : 1 2nd c-rod trav.mm: 4.00 Speed 1/min: 1055...1085 4th speed 1/min: 1200 BASIC SETTING 1/mi: 900 C-rod trav.mm : 0.00...1.00 1st speed Contr.-rod trav.mm: 13.50...13.60 LOWEST RATED SPEED I Control-lever Del.quantity cm3/: 25.4...25.6 position degrees: 4...12 100H.: (25.1...25.9) Testing: Speed 1/min: 100 C-rod trav.mm min: 5.90 Speed 1/min: 300 cm3/: 0.5 Dispersion C-rod trav.mm : 4.30...4.50 100H.: (0.9) 2nd speed 1/min: 300.0 CONSTANT REGULATION Speed 1/min: 370...490 Contr.-rod trav. m: 4.3...4.5 Del.quantity cm3/: 1.5...2.1 100H.: (1.2...2.4) Dispersion cm3/: 0.8 100H.: (1.2) compensator (LDA,ADA,ALDA) 1st version Setting (B) Setting of injection pump with 1/min : 500 externally-mounted governor Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.50...13.60 SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 0.70...0.90 Measurement 2nd speed 1/min: 550 1/min : 500 Speed Sleeve travel mm: 4.00...4.60 3rd speed 1/min: 8000 1st pressure hPa : -C-rod trav.mm : 9.40...9.60 Sleeve travel mm: 6.60...6.90 2nd pressure hPa : 590 4th speed 1/min: 900 Sleeve travel mm: 7.70...7.90 C-rod trav.mm : 12.60...12.70 3rd pressure hPa : 390 : 10.40...10.80 SLEEVE POSITION C-rod trav.mm Control-lever position Degree: -1 FUEL-DELIVERY CHARACTERISTICS 17min: 965 Cont.-rod travelmm: 15.20...17.80 1st version Charge press. hPa : 900 FULL-LOAD DELIV. AT FULL-LOAD STOP Speed 1/min : 500 Del.quantity cm3/: 249.0...255.0 1000H.: (246.0...258.0) 1st version Speed 1/min: 900 Charge press. hPa : -1/min : 500 Charge press. hPa : 900 Speed Del.quantity cm3/: 254.0...256.0 1000H.: (251.0...259.0) Del.quantity cm3/: 125.0...127.0 1000H.: (122.0...130.0)

## STARTING FUEL DELIVERY

## LOW IDLE

Speed 1/min : 300

Contr.-rod trav.mm: 4.30...4.50
Del.quantity cm3/: 15.0...21.0
1000H.: (12.0...24.0)
Dispersion cm3/: 8.00
1000H.: (12.00)

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS : 3.40...3.50 Prestroke mm : (3.35...3.55) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 Test sheet Edition Superceeded : UNI 13.8 D : 10.04.87 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 848 SD mark cyl. no. : 1 Injection pump Pump designation : PE6P120A720RS3195 BASIC SETTING EP type number : 0 411 826 762 1/mi: 900 Governor 1st speed Governor design. : RQV300...900PA857 Governer no. : 0 421 813 613 Contr.-rod trav.mm: 12.30...12.40 Del.quantity cm3/ : 23.2...23.4 Customer-spec. information Customer : IVECO-UNIC 100H.: (22.9...23.7) Engine : 8210.22.101-105 cm3/:0.5Dispersion 1st version kW : 242.0 1/min: 1800 100H.: (0.9) Speed TEST BENCH REQUIREMENTS 2nd speed 1/min: 300.0 Contr.-rod trav. m: 3.9...4.1

Del.quantity cm3/: 1.7...2.3

100H.: (1.4...2.6)

Dispersion cm3/: 0.8

100H.: (1.2) Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar : 1.50 externally-mounted governor Calibrating nozzle-holder SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 0.50...0.90 assembly : 1 688 901 019 2nd speed 1/min: 550 Sleeve travel mm: 4.00...4.60 Opening pressure, bar : 207...210 3rd speed 1/min: 800 Sleeve travel mm: 6.60...7.00 Perforated-plate 4th speed 1/min: 900 diameter mm : 0.8 Sleeve travel mm: 7.70...7.90 Test inj. tubing : 1 680 750 067 SLEEVE POSITION Control-lever position Outside diameter Degree: -1 1/min: 965 x Wall thickness : 6.00x1.50x1000 Cont.-rod travelmm: 15.20...17.80 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version Speed 1/min: 900 Charge press. hPa: 900 per values Del.quantity cm3/: 232.0...234.0 START OF DELIVERY 1000H.: (229.0...237.0) Test pressure, bar: 25...27

```
Dispersion cm3/ : 5.00
             1000H.: (9.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 56...64
Testing:
1st c-rod trav.mm : 11.30
             1/min: 940...950
  Speed
2nd c-rod trav.mm : 4.00
             1/min: 1045...1075
  Speed
             1/min : 1200
4th speed
                 : 0.00...1.00
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 3...11
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 5.50
Speed 1/min : 300
C-rod trav.mm : 3.90...4.10
                    : 2.00
C-rod trav.mm
            1/min : 345...405
Speed
 compensator (LDA_ADA_ALDA)
1st version
Setting
             1/min : 500
Speed
             hPa : 900
Pressure
Contr.-rod trav.mm: 12.30...12.40
Measurement
             1/min : 500
Speed
1st pressure hPa
                    : 8.90...9.10
  C-rod trav.mm
2nd pressure hPa : 520
  C-rod trav.mm
                   : 11.50...11.60
3rd pressure hPa : 370
  C-rod trav.mm
                   : 9.60...9.80
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
Speed
             1/min : 500
Del.quantity cm3/: 227.0...233.0
1000H.: (224.0...236.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/: 127.0...129.0
```

1000H.: (124.0...132.0)

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 250.0...270.0 1000H.: (246.0...274.0)

LOW IDLE

Speed 1/min: 300 Contr.-rod trav.mm: 3.90...4.10 Del.quantity cm3/: 17.0...23.0 1000H.: (14.0...26.0) Dispersion cm3/: 8.00 1000H.: (12.00)

On activation of the starting solenoid, the start position must be reached.

```
Cam sequence : 1- 5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : VOL 10,0 U
Test sheet
                    : 12.06.87
Edition
Superceeded
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 401 846 850
                                                      BASIC SETTING
Combination no.
                                                      1st speed 1/mi: 700
Injection pump
Pump designation : PE6P110A320RS3197
                                                      Contr.-rod trav.mm: 12.80...12.90
EP type number
                    : 0 411 816 752
Governor
Governor design.
Governer no.
                   : RQV300...1100PA232-2
                                                      Del.quantity cm3/: 14.7...14.9
                    : 0 421 813 639
                                                                     100H.: (14.4...15.2)
Customer-spec. information
                   : VOLVO-BM
                                                                     cm3/:0.4
                                                      Dispersion
Customer
Engine
                    : TD102
                                                                     100H.: (0.7)
1st version kW : 196.0
                                                                     1/min: 300.0
                                                      2nd speed
              1/min: 2200
                                                      Del.quantity cm3/: 1.6...2.0
Speed
                                                                     100H.: (1.3...2.2)
cm3/: 0.3
100H.: (0.6)
TEST BENCH REQUIREMENTS
                                                      Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 300
                                                      Sleeve travel mm: 1.40...1.60
2nd speed 1/min: 350
Sleeve travel mm: 1.70...2.30
3rd speed 1/min: 700
Inlet press., bar : 1.50
Calibrating nozzle-holder
              : 0 681 343 009
 assembly
                                                        Sleeve travel mm: 4.40...5.00
                                                      4th speed 1/min: 1165
Opening
                                                        Sleeve travel mm: 8.70.3.8.90
pressure, bar : 172...175
                                                      5th speed 1/min: 1255
                                                        Sleeve travel mm: 9.60...10.00
Test inj. tubing : 1 680 750 015
                                                      SLEEVE POSITION
Outside diameter
                                                      Control-lever position
x Wall thickness
                                                                   Degree: -1
                                                                     17min: 1150
x Length mm
                    : 6.00x1.50x600
                                                      Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
                                                                     1/min: 700
                                                      Speed
                                                      Charge press. hPa: 900
START OF DELIVERY
                                                      Del.quantity cm3/: 147.0...149.0
1000H.: (144.0...152.0)
Dispersion cm3/: 4.00
Test pressure, bar: 25...27
Prestroke mm
                    : 3.50...3.60
                    : (3.45...3.65)
                                                                    1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
C07
```

```
: 1- 5- 3- 6- 2- 4
: 0-60-120-180-240-300
: 0.50 (0.75)
: 1
700
: 12.80...12.90
: 14.7...14.9
(14.4...15.2)
0.4
(0.7)
300.0
1.6...2.0
(1.3.
0.3
(0.6)
(1.3...2.2)
ection pump with
ited governor
300
 1.40...1.60
 350
 1.70...2.30
700
 4.40...5.00
 1165
8.70...8.90
 1255
9.60...10.00
:ion
1150
15.20...17.80
FULL-LOAD STOP
 700
 900
 147.0...149.0
 (144.0...152.0)
4.00
 (7.50)
```

25..,27

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 104...112
Testing:
1st c-rod trav.mm : 11.80
  Speed
              1/min : 1160...1170
2nd c-rod trav.mm : 4.00
Speed 1/min: 1240...1270
4th speed 1/min: 1400
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 69...77
Testing:
              1/min : 100
Speed
C-rod trav.mm min : ?
           1/min : 300
Speed
C-rod trav.mm
CONSTANT REGULATION
Speed
              1/min : ?
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
hPa : 900
Speed
Pressure
Contr.-rod trav.mm: 12.80...12.90
Measurement
Speed
              1/min : 500
1st pressure hPa : -
  C-rod trav.mm
                      : 11.30...11.50
2nd pressure hPa : 300
C-rod trav.mm : 12.6
                      : 12.60...12.70
3rd pressure hPa : 150
  C-rod trav.mm
                     : 11.70...11.90
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 900
Speed 1/min: 1000
Del.quantity cm3/: 142.0...146.0
1000H.: (139.0...149.0)
Charge press. hPa: -
Speed 1/min: 700
Del.quantity cm3/: 118.5...121.5
1000H.: (116.0...124.0)
STARTING FUEL DELIVERY
CO8
```

```
LOW IDLE
```

Speed 1/min: 300
Del.quantity cm3/: 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/: 3.00 1000H.: (6.00)

Remarks: APPLICATION Loading machine

1st version SWITCH-OVER POINT 1/min: 1150 Speed 1/min: 220 (240) Speed

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1- 5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                    : VOL 10.0 V
: 12.06.87
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition
Superceeded
                    : ISO-4113
Calibrating oil
                                                         SD mark cyl. no. : 1
                     : 0 401 846 851
Combination no.
                                                         BASIC SETTING
Injection pump
Pump designation
                    : PE6P110A320RS3080
                                                         1st speed
                                                                      1/mi: 700
                    : 0 411 816 722
EP type number
Governor
                                                         Contr.-rod trav.mm: 13.70...13.80
                    : RQV250...1050PA657
Governor design.
                                                         Del.quantity cm3/: 18.5...18.7
                      -17
                     : 0 421 813 652
Governer no.
                                                                        100H.: (18.2...19.0)
Customer-spec. information
                                                                        cm3/:0.4
Customer
                    : VOLVO
                                                         Dispersion
                     : TD102FAQ
                                                                        100H.: (0.7)
Engine
                                                        2nd speed 1/min: 250.0

Contr.-rod trav. m: 3.8...4.0

Del.quantity cm3/: 1.5...1.9

100H.: (1.2...2.1)

Dispersion cm3/: 0.3
1st version kW : 221.0
               1/min: 2100
Speed
TEST BENCH REQUIREMENTS
                                                                        100H.: (0.6)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                         (B) Setting of injection pump with
                                                             externally-mounted governor
Overflow valve
                     : 1 417 413 025
                                                         SLEEVE TRAVELS
                                                         1st speed 1/min: 250
Steeve travel mm: 1.00...1.40
Inlet press., bar: 1.50
                                                                      1/min: 350
Calibrating nozzle-holder
                                                         2nd speed
                                                         Sleeve travel mm: 2.20...2.80 3rd speed 1/min: 700
 assembly
           : 0 681 343 009
                                                           Sleeve travel mm: 6.40...6.60
Opening
                                                         4th speed 1/min: 1085
Sleeve travel mm: 7.80...8.00
pressure, bar : 172...175
                                                         5th speed 1/min: 1170
Test inj. tubing : 1 680 750 015
                                                           Sleeve travel mm: 9.20...9.60
Outside diameter
                                                         SLEEVE POSITION
x Wall thickness
                                                         Control-lever position
                                                        Degree: -1
Speed 1/min: 1120
Cont.-rod travelmm: 15.20...17.80
x Length mm
                     : 6.00x1.50x600
(A) Injection pump setting values
    Insp. values in parentheses
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                         1st version
                                                                        1/min: 700
START OF DELIVERY
                                                         Speed
                                                        Charge press. hPa: 900
Del.quantity cm3/: 185.0...187.0
1000H.: (182.0...190.0)
Test pressure, bar: 25...27
                    : 3.00...3.10
Prestroke mm
                     : (2.95...3.15)
```

C09

```
Dispersion cm3/ : 4.00
            1000H.: (7.50)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 59...67
Testing:
1st c-rod trav.mm : 12.70
            1/min: 1080...1090
  Speed
2nd c-rod trav.mm: 4.00
            1/min : 1155...1185
  Speed
            1/min : 1300
4th speed
                 : 0.00...1.00
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 4...12
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 5,30
Speed 1/min : 250
C-rod trav.mm : 3.80...4.00
CONSTANT REGULATION
            1/min: 250...370
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 900
Pressure
Contr.-rod trav.mm: 13.70...13.80
Measurement
            1/min : 500
Spead
1st pressure hPa
                   : 10.80...11.00
  C-rod trav.mm
                   : 520
2nd pressure hPa
                   : 13.50...13.60
 C-rod trav.mm
3rd pressure hPa
                  : 100
  C-rod trav.mm
                   : 11.10...11.30
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
            1/min : 700
Speed
Del.quantity cm3/: 136.0...139.0
            1000H.: (133.5...141.5)
STARTING FUEL DELIVERY
Speed
           1/min : 100
```

Del.quantity cm3/: 160.0...190.0 1000H.: (156.0...194.0) Contr.-rod tray.mm: 20.00...21.00

LOW IDLE

Speed 1/min: 250 Contr.-rod trav.mm: 3.80...4.00 Del.quantity cm3/: 15.0...19.0 1000H.: (12.5...21.5) Dispersion cm3/: 3.00

1000H.: (6.00)
Delivery-valve spring pre-tension = 2.40...2.60 mm.

Permissible alteration from 2.20...2.90

nm

C10

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Prestroke mm
                                                                           : 2.60...2.70
                                                                           : (2.55...2.75)
                                                       Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                       Cam seguence : 1-5-3-6-2-4
Test sheet
                    : VOL 12_0K12
                    : 12.06.87
Edition
Superceeded
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no. : 0 401 846 854
                                                       SD mark cyl. no. : 1
Injection pump
Pump designation : PE6P12OA32ORS3118-1
                                                       BASIC SETTING
EP type number : 0 411 826 739
Governor
                                                       1st speed
                                                                       1/mi: 700
Governor design. : RQV250...850PA657-20
Governer no. : 0 421 813 650
                                                       Contr.-rod trav.mm: 12.30...12.40
                                                       Del.quantity cm3/: 21.4...21.6
Customer-spec. information
Customer
                   : VOLVO
                                                                      100H.: (21.1...21.9)
Engine
                   : TD122FCQ
                                                       Dispersion
                                                                      cm3/:0.5
1st version kW : 287.0
              1/min: 1700
                                                                      100H.: (0.9)
Speed
                                                                      1/min: 250.0
TEST BENCH REQUIREMENTS
                                                       2nd speed
                                                       Contr.-rod trav. m: 3.3...3.5

Del.quantity cm3/: 1.8...2.3

100H.: (1.5...2.5)

Dispersion cm3/: 0.5

100H.: (0.7)
Calibrating-oil inlet temp. OC
                   : 38...42
Overflow valve
                    : 1 417 413 025
                                                        (B) Setting of injection pump with
                                                            externally-mounted governor
Inlet press., bar : 1.50
                                                       SLEEVE TRAVELS
Calibrating nozzle-holder
                                                       1st speed 1/min: 250
                 : 1 688 901 019
 assembly
                                                       Sleeve travel mm: 1.00...1.40
2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.80
3rd speed 1/min: 700
Opening
pressure, bar : 207...210
                                                         Sleeve travel mm: 6.40...6.60
Lubricating oil : 8
                                                       4th speed 1/min: 885
                                                         Sleeve travel mm: 7.60...7.80
Test inj. tubing : 1 680 750 067
                                                       5th speed 1/min: 955
                                                         Sleeve travel mm: 8.80...9.20
Outside diameter
                                                       SLEEVE POSITION
x Wall thickness
                  : 6.00x1.50x1000
                                                       Control-lever position
x Length mm
                                                                    Degree: -1
1/min: 930
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       Cont.-rod travelmm: 15.20...17.80
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
START OF DELIVERY
                                                       1st version
                                                       Speed
                                                                      1/min: 700
Test pressure, bar: 25...27
                                                       Charge press. hPa: 900
```

Del.quantity cm3/: 214.5...216.5 1000H.: (211.5...219.5) Dispersion cm3/: 5.00 1000H.: (9.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 57...65 Testing: 1st c-rod trav.mm : 11.30 Speed 1/min : 880...890 2nd c-rod trav.mm : 4.00 1/min: 990...970 Speed 1/min : 1100 4th speed : 6.60...1.00 C-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 3..11 Testing: 1/min : 100 Speed C-rod trav.mm min : 4.80 1/min : 250 Speed C-rod trav.mm : 3.30...3.50 CONSTANT REGULATION 1/min : 250...350 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 12.30...12.40 Measurement 1/min : 500 Speed 1st pressure hPa : 9.20...9.40 C-rod trav.mm : 80 2nd pressure hPa C-rod trav.mm : 9.60...9.70 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 154.0...156.0 1000H.: (151.0...159.0) STARTING FUEL DELIVERY

1/min : 100

Del.quantity cm3/: 240.0...280.0 1000H.: (236.0...284.0) Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Permissible alteration from 2.20...2.90

nīn

C12

Speed

```
: 8- 7- 2- 6- 3- 5-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
                                                                             4- 1
Note inst. in remarks column
Test sheet
                    : MAN 14,5 A
                                                      SD ang. spacing CS: 0-45-90-135-180-225-
                    : 30.03.87
Edition
Superceeded
                                                                             270-315
                   : 11.85
                                                      Tolerance + - 0
                                                                          : 0.50 (0.75)
Calibrating oil : ISO-4113
                   : 0 401 848 082
Combination no.
                                                      SD mark cyl. no. : 8
Injection pump
                                                      BASIC SETTING
Pump designation : PE8P110A520LS851
EP type number
                   : 0 411 818 046
                                                                  1/mi: 1150
                                                      1st speed
Governor
                    : RQ250/1150PA688
                                                      Contr.-rod trav.mm: 10.80...10.90
Governor design.
Governer no.
                    : 0 421 801 231
                                                      Del.quantity cm3/: 14.3...14.5
Customer-spec. information
                                                                     100H.: (14.0...14.7)
Customer
                   : MAN
Engine
                   : D2848T
                                                                     cm3/:0.4
                                                      Dispersion
                                                                     100H.: (0.7)
1st version kW : 245.0
              1/min: 2300
Speed
                                                                     1/min: 250.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 4.9...5.1
Del.quantity cm3/: 1.8...2.4
100H.: (1.5...2.6)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. Oc
                    : 38...42
                                                                     cm3/:0.4
                                                      Dispersion
                                                                     100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                                   Degree: -2
1/min: 600
Inlet press., bar : 1.50
                                                      Speed
                                                      Cont.-rod travelmm: 19.20...20.80
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                      1st version
                                                      Speed 1/min: 1150
Charge press. hPa: 1000
Del.quantity cm3/: 143.0...145.0
1000H.: (140.5...147.5)
Dispersion cm3/: 4.00
Test inj. tubing : 1 680 750 015
Outside diameter
                                                                    1000H.: (7.50)
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Setting point:
                                                                1/min : 600
                                                      Contr.-rod trav.mm: 20.0
    per values
START OF DELIVERY
                                                      Testing:
Test pressure, bar: 25...27
                                                      1st c-rod trav.mm : 9.80
                                                      Speed 1/min: 1195...1210
2nd c-rod trav.mm: 4.00
Prestroke mm
                    : 3.00...3.10
                    : (2.95...3.15)
                                                        Speed
                                                                  1/min : 1280...1310
Contr.-rod trav.mm: 9.00...12.00
                                                      3rd c-rod trav.mm : 4.00
C13
```

4th speed 1/min : 1450 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 250 Speed Contr.-rod trav.mm: 5.0 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.50 1/min : 250 Speed C-rod trav.mm : 4.90...5.10 : 2.00 C-rod trav.mm 1/min : 310...350 Spéed TORQUE CONTROL Dimension a mm Torque-control curve - 1st version 1st speed 1/min: 1150 C-rod trav.mm: 10.80...10.90 2nd speed 1/min: 700 C-rod trav.mm : 10.80...11.00 compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 500 Pressure hPa : 1000 Contr.-rod trav.mm: 10.80...10.90 Measurement Speed 1/min : 500 1st pressure hPa : -: 9.60...9.70 C-rod trav.mm 2nd pressure hPa : 290 C-rod trav.mm : 10.50...10.60 3rd pressure hPa : 230 C-rod trav.mm : 10.00...10.20 SWITCH-OVER POINT 1/min : 170 (190) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 1000 Speed 1/min : 700 Del.quantity cm3/: 137.0...141.0 1000H.: (134.0...144.0) Charge press. hPa : -Speed 1/min: 500 Del.quantity cm3/: 108.0...110.0 1000H.: (105.5...112.5) cm3/:-Dispersion 1000H.: (7.50)

STARTING FUEL DELIVERY

1/min : 100 Speed Del.quantity cm3/: 190.0...210.0

1000H.: (186.0...214.0)

LOW IDLE

1/min : 250 Speed Contr.-rod trav.mm: 4.90...5.10 Del.quantity cm3/: 18.0...24.0 1000H:: (15.5...26.5) Dispersion cm3/: 4.50 1000H.: (7.50)

Remarks:

: MAN-NR. 2-7553

Note inst. in remarks column

Test sheet : MB 14,6 E Edition : 12.12.86 Superceeded : 6.85 : MB 14,6 E Calibrating oil : ISO-4113

Combination no. : 0 401 848 708

Injection pump

Pump designation : PE8P110A320L\$3802

EP type number : 0 411 818 705

Governor

Governor design. : RQ300/1150PA187-3

Governer no. : 0 421 801 133

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M422 Engine

1st version kW : 206.0 Speed 1/min: 2300 2nd version kW : 206 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Over flow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27 Dispersion cm3/ : 4.00 1000H.: (8.00) : 4.00...4.10 : (3.95...4.15) Prestroke mm 2nd version 1/min: 1150 Speed Del.quantity cm3/: 127.0...129.0 1000H.: (124.0...132.0) Dispersion cm3/: 4.0 Contr.-rod trav.mm: 9.00...12.00 : 8- 7- 2- 6- 3- 5-Cam sequence 4- 1 1000H .: (8.0) HIGHEST RATED SPEED SD ang. spacing CS: 0-45-90-135-180-225-270-315 Setting point: Tolerance + - 0 : 0.50 (0.75) Speed 1/min : 650 Contr.-rod trav.mm: 13.5 SD mark cyl. no. : 8 Testing: BASIC SETTING 1st c-rod trav.mm : 10.70 1/min: 1195...1210 Speed 1st speed 1/mi: 750 2nd c-rod trav.mm : 4.00 Speed 1/min: 1240...1270 th speed 1/min: 1350 C-rod trav.mm: 0.00...1.50 Contr.-rod trav.mm: 11.70...11.80 4th speed Del.quantity cm3/: 11.3...11.5 Setting point: 100H.: (11.0...11,7) 1/min : 650 Speed Contr.-rod trav.mm: 13.5 Dispersion cm3/:0.4Testing: 1st c-rod trav.mm : 11.30 Speed 1/min : 1195...1210 2nd c-rod trav.mm : 4.00 100H.: (0.8) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.9...8.1 1/min : 1235...1265 Speed Del.quantity cm3/ : 1.5...2.1 1/min : 1350 4th speed C-rod trav.mm : 0.00...1.00 100H.: (1.2...2.3) cm3/: 0.4 100H.: (0.7) Dispersion LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min: 300 1st speed 1/min: 1150 Contr.-rod trav.mm: 12.3...12.4 Del.quantity cm3/: 12.7...12.9 100H.: (-) Contra-rod trav.mm: 8.1 Testing: cm3/: 0.4 100H.: (0.8) 1/min: 300 Dispersion 1/min : 100 Speed C-rod trav.mm min : 10.20 1/min : 300 2nd speed Speed Contr.-rod trav.mm: 8.00...8.10 Del.quantity cm3/: 1.5...2.1 100H.: (-) C-rod trav.mm : 8.00...8.20 : 2.00 C-rod trav.mm 1/min : 420...460 1/min : 550 Speed Speed SLEEVE POSITION C-rod trav.mm max: 1.80 Control-lever position FUEL-DELIVERY CHARACTERISTICS Degree: -1 1/min: 650 1/min : 1150 Speed Speed Del.quantity cm3/: 132.0...136.0 1000H.: (129.0...139.0) Dispersion cm3/: 7.00 1000H.: (10.0) Speed 1/min: 600 Cont.-rod travelmm: 13.00...14.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Del.quantity cm3/: 118.0...122.0 Speed 1/min: 750 1000H.: (115.0...125.0) Del.quantity cm3/: 113.0...115.0 1000H.: (110.5...117.5)

C16

Dispersion cm3/: 8.0 1000H.: (11.0)

STARTING FUEL DELIVERY

Version 1: Without return-flow restriction
Version 2: With return-flow restriction

```
: 4.00...4.10
: (3.95...4.15)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Prestroke mm
                                                     Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
Note inst. in remarks column
Test sheet
                   : MB 14,6 E 4
                   : 13.05.87
Superceeded
Calibrating oil : ISO-4113
                                                     SD ang. spacing CS: 0-45-90-135-180-225-
Combination no. : 0 401 848 708
                                                                          270-315
                                                     Tolerance + - 0 : 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320LS3802~10
                                                     SD mark cyl. no. : 8
EP type number : 0 411 818 770
                                                     BASIC SETTING
Governor
Governor design. : RQ300/1150PA187-3
                                                     1st speed 1/mi: 750
Governer no. : 0 421 801 133
                                                     Contr.-rod trav.mm: 11.70...11.80
Customer-spec. information
                   : DAIMLER-BENZ
Customer
                                                     Del.quantity cm3/: 11.3...11.5
Engine
                   : 0M422
                                                                   100H.: (11.0...11.7)
1st version kW : 206.0
             1/min: 2300
                                                     Dispersion
                                                                   cm3/:0.4
Speed
                                                                   100H.: (0.7)
TEST BENCH REQUIREMENTS
                                                    2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/: 1.5...2.1
Calibrating-oil inlet temp. °C : 38...42
Overflow valve
                                                                   100H.: (1.2...2.3)
                                                                  cm3/: 0.4
100H.: (0.7)
                    : 1 417 413 025
                                                     Dispersion
Inlet press., bar : 1.50
                                                     (B) Setting of injection pump with
                                                         externally-mounted governor
Overflow
 quantity min. 1/h: 100...120
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 300
Sleeve travel mm: 2.10...2.30
Calibrating nozzle-holder
 assembly : 0 681 343 009
                                                                 1/min: 650
                                                     2nd speed
                                                       Sleeve travel mm: 6.90...7.10
Opening
                                                     3rd speed 1/min: 1200
 pressure, bar : 172...175
                                                       Sleeve travel mm: 7.30...7.70
                                                     4th speed 1/min: 1250
                                                       Sleeve travel mm: 9.30...10.30
Test inj. tubing : 1 680 750 015
                                                     SLEEVE POSITION
Outside diameter
x Wall thickness
                                                     Control-lever position
                  : 6.00x1.50x600
                                                                 Degree: -1
1/min: 650
x Length mm
                                                     Cont.-rod travelmm: 13.00...14.00
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                     1st version
START OF DELIVERY
                                                     Speed
                                                                   1/min: 750
                                                     Del.quantity cm3/: 113.0...115.0
Test pressure, bar: 25...27
                                                                  1000H.: (110.5...117.5)
C18
```

```
Dispersion cm3/ : 4.00
             1000H.: (7.00)
HIGHEST RATED SPEED
Setting point:
Speed
            1/min : 650
Contr.-rod trav.mm: 13.5
Testing:
1st c-rod trav.mm : 10.70
           1/min: 1195...1210
  Speed
2nd c-rod trav.mm : 4.00
           1/min : 1240...1270
  Speed
4th speed 1/min: 1350
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed 1/min: 300
Contr.-rod trav.mm: 8.1
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 10.20
            1/min : 300
Speed
                : 8.00...8.20
C-rod trav.mm
C-rod trav.mm
                  : 2.00
            1/min : 420...460
1/min : 550
Speed
Speed
C-rod trav.mm max: 1.80
FUEL-DELIVERY CHARACTERISTICS
Speed
             1/min : 1150
Del.quantity cm3/: 132.0...136.0
             1000H.: (129.0...139.0)
cm3/: 7.00
1000H.: (10.0)
Dispersion
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 130.0...150.0
1000H.: (126.0...154.0)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column : 8- 7- 2- 6- 3- 5-Cam sequence Test sheet Ž- 1 : MB 14,6 N 3 : 13.05.87 Edition Superceeded Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-90-135-180-225-Combination no. : 0 401 848 737 270-315 Tolerance + - 0 : 0.50 (0.75) Injection pump Pump designation : PEBP110A320LS3802-10 EP type number : 0 411 818 710 SD mark cyl. no. : 8 BASIC SETTING Governor Governor design. : RQ750PA374R Governer no. : 0 421 801 074 1st speed 1/mi: 700 Contr.-rod trav.mm: 13.90...14.00 Customer-spec. information : DB Customer Del.quantity cm3/: 14.2...14.4 : OAIMLER-BENZ Engine 100H.: (13.9...14.7) 1st version kW : 154.0 cm3/:0.41/min: 1500 Speed Dispersion TEST BENCH REQUIREMENTS 100H.: (0.8) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.3...8.4 Del.quantity cm3/: 1.3...1.9 100H.: (1.0...2.1) Dispersion cm3/: 0.4 Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 100H.: (0.7) Inlet press., bar: 1.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Overflow quantity min. 1/h: 100...120 1st version Speed 1/min: 700 Del.quantity cm3/: 142.0...144.0 Calibrating nozzle-holder : 0 681 343 009 1000H.: (139.0...147.0) assembly cm3/ : 4.00Dispersion 1000H .: (8.00) Opening pressure, bar : 172...175 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 015 Testing: 1st c=rod trav.mm : 12.90 Speed 1/min : 750...755 Outside diameter x Wall thickness 2nd c-rod trav.mm : 6.10 : 6.00x1.50x600 1/min: 783...796 Speed x Length mm (A) Injection pump setting values Insp. values in parentheses STARTING FUEL DELIVERY Set constant delivery quant. per values Speed 1/min : 100 START OF DELIVERY Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0) Test pressure, bar: 25...27

Remarks: APPLICATION Generator

```
: 4.00...4.10
: (3.95...4.15)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                 Prestroke mm
Note inst. in remarks column
                                                 Contr.-rod trav.mm: 9.00...12.00
                                                                   : 8- 7- 2- 6- 3- 5-
                                                 Cam sequence
Test sheet
                                                                      4- 1
                  : MB 14,6 N 4
                  : 13.05.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                 SD ang. spacing CS: 0-45-90-135-180-225-
                  : 0 401 848 738
                                                                      270-315
Combination no.
                                                 Tolerance + - 0
                                                                    : 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320LS3802-10
                                                 SD mark cyl. no. : 8
EP type number
                  : 0 411 818 710
                                                 BASIC SETTING
Governor
Governor design.
                  : RQ900PA310R
Governer no.
                 : 0 421 801 059
                                                 1st speed 1/mi: 850
                                                 Contr.-rod trav.mm: 13.90...14.00
Customer-spec. information
                  : DAIMLER-BENZ
Customer
                                                 Del.quantity cm3/: 15.2...15.4
Engine
                  : OM 422
                                                              100H.: (14.9...15.7)
1st version kW : 180.0
Speed
             1/min: 1800
                                                 Dispersion
                                                              cm3/:0.4
TEST BENCH REQUIREMENTS
                                                              190H.: (0.8)
Calibrating-oil inlet temp. °C
                                                 2nd speed
                                                              1/min: 300.0
                  : 38...42
                                                 Contr.-rod trav. m: 8.2...8.4
                                                 Del.quantity cm3/: 1.4...2.0
                                                              100H.: (1.1...2.2)
Overflow valve
                                                              cm3/:0.4
                  : 1 417 413 025
                                                 Dispersion
                                                              100H.: (0.7)
Inlet press., bar : 1.50
                                                 FULL-LOAD DELIV. AT FULL-LOAD STOP
Overflow
quantity min. 1/h: 100...120
                                                 1st version
                                                              1/min: 850
                                                 Speed
                                                 Del.quantity cm3/: 152.0...154.0
Calibrating nowzle-holder
                 : 0 681 343 009
                                                             1000H.: (149.0...157.0)
 assembly
                                                             cm3/ : 4.00
1000H.: (8.00)
                                                 Dispersion
Opening
pressure, bar : 172...175
                                                 HIGHEST RATED SPEED
Test inj. tubing : 1 680 750 015
                                                 Testing:
                                                 1st c-rod trav.mm : 12.90
                                                            1/min: 900...905
Outside diameter
                                                   Speed
x Wall thickness
                                                 2nd c-rod trav.mm : 6.30
                 : 6.00x1.50x600
                                                           1/min : 940...950
x Length mm
                                                   Speed
(A) Injection pump setting values
                                                 STARTING FUEL DELIVERY
    Insp. values in parentheses
    Set constant delivery quant.
   per values
                                                             1/min : 100
                                                 Speed
                                                 Del.quantity cm3/: 140.0...160.0
START OF DELIVERY
                                                             1000H.: (136.0...164.0)
Test pressure, bar: 25...27
```

Remarks: APPLICATION Generator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                     : 4.00...4.10
                                                  Prestroke mm
                                                                     : (3.95...4.15)
                                                   Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                   Cam sequence : 8- 7- 2- 6- 3- 5-
Test sheet
                  : MB 14,6 N 5
Edition
                  : 13.05.87
Superceeded
Calibrating oil : ISO-4113
                                                   SD ang. spacing CS: 0-45-90-135-180-225-
                  : 0 401 848 739
                                                                       270-315
Combination no.
                                                   Tolerance + - 0
                                                                     : 0.50 (0.75)
Injection pump
Pump designation : PE8P110A32UL$3802-10
                                                   SD mark cyl. no. : 8
EP type number : 0 411 818 710
Governor
                                                  BASIC SETTING
Governor design. : RQ1050PA310
Governer no. : 0 421 801 108
                                                   1st speed 1/mi: 1000
                                                   Contr.-rod trav.mm: 14.30...14.40
Customer-spec. information
                  : DAIMLER-BENZ
Customer
                                                  Del.quantity cm3/: 15.9...16.1
                  : OM 422
Engine
                                                                190H.: (15.6...16.4)
ist version kW : 198.0
Speed
             1/min: 2100
                                                  Dispersion
                                                                cm3/:0.4
TEST BENCH REQUIREMENTS
                                                                100H.: (0.8)
Calibrating-oil inlet temp. °C
                                                   2nd speed
                                                                1/min: 300.0
                 : 38...42
                                                   Contr.-rod trav. m: 8.2...8.4
                                                  Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.2)
Dispersion cm3/: 0.4
100H.: (0.7)
Overflow valve
                   : 1 417 413 025
Inlet press., bar: 1.50
                                                  FULL-LOAD DELIV. AT FULL-LOAD STOP
Overflow
 quantity min. 1/h: 100...120
                                                  1st version
                                                  Calibrating nozzle-holder
assembly : 0 681 343 009
Opening
pressure, bar : 172...175
                                                  HIGHEST RATED SPEED
Test in i. tubing : 1 680 750 015
                                                  Testing:
                                                  1st c-rod trav.mm : 13.30
Speed 1/min : 1050...1055
Outside diameter
                                                  2nd c-rod trav.mm : 4.00
x Wall thickness
                 : 6.00x1.50x600
                                                     Speed 1/min: 1108...1118
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                  STARTING FUEL DELIVERY
    per values
                                                              1/min : 100
                                                  Speed
                                                  Del.quantity cm3/: 140.0...160.0
START OF DELIVERY
                                                               1000H.: (136.0...164.0)
Test pressure, bar: 25...27
```

Remarks: APPLICATION Generator C25

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 4.00...4.10
                                                      Prestroke mm
                                                                          : (3.95...4.15)
                                                      Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
4- 1
Note inst. in remarks column
Test sheet
                   : MB 14,6 M 2
: 27.03.87
Superceeded
Calibrating oil : ISO-4113
                                                      SD ang. spacing CS: 0-45-90-135-180-225-
Combination no.
                   : 0 401 848 740
                                                                            270-315
                                                      Tolerance + - 0
                                                                         : 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320LS3813-10
                                                      SD mark cyl. no. : 8
EP type number : 0 411 818 712
                                                      BASIC SETTING
Governor
Governor design. : RQV350...1150PA378-6
Governer no. : 0 421 813 619
                                                      1st speed 1/mi: 1150
Customer-spec. information
                                                      Contr.-rod trav.mm: 11.50...11.60
Customer
                   : DAIMLER-BENZ
                                                      Del.quantity cm3/ : 13.1...13.3
Engine
                   : 0M422
                                                                    100H.: (12.8...13.5)
1st version kW : 206.0
             1/min: 2300
                                                                    cm3/:0.4
Speed
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.8)
                                                     2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.4...7.6

Bel.quantity cm3/: 1.4...1.8
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                    100H.: (1.1...2.0)
cm3/: 0.4
100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                      Dispersion
Inlet press., bar : 1.50
                                                      (B) Setting of injection pump with
Overflow
                                                          externally-mounted governor
 quantity min. 1/h: 100...120
                                                      SLEEVE TRAVELS
Calibrating nozzle-holder
                                                      1st speed 1/min: 350
 assembly : 0 681 343 009
                                                        Sleeve travel mm: 1.50...1.70
                                                                   1/min: 500
                                                      2nd speed
                                                        Sleeve travel mm: 1.70...1.90
Opening
 pressure, bar : 172...175
                                                      3rd speed 1/min: 800
                                                      Sleeve travel mm: 4.60...4.90
4th speed 1/min: 1175
Sleeve travel mm: 7.60...7.90
Test inj. tubing : 1 680 750 015
                                                      5th speed 1/min: 1300
                                                        Sleeve travel mm: 9.10...9.50
Outside diameter
x Wall thickness
                                                      SLEEVE POSITION
                   : 6.00x1.50x600
x Length mm
                                                      Control-lever position
                                                     Degree: -1
Speed 1/min: 1230
Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
    per values
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
                                                      1st version
Test pressure, bar: 25...27
                                                                   1/min: 1150
                                                      Speed
C26
```

```
Del.quantity cm3/: 131.0...133.0
             1000H.: (128.5...135.5)
Dispersion
             cm3/ : 4.00
             1000H.: (8.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 58...66
Testing:
1st c-rod : ~v.mm : 10.50
             1/min: 1190...1200
  Speed
2nd c-rod trav.mm : 4.00
  Speed
             1/min: 1280...1310
             1/min : 1400
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 10...18
Testing:
Speed
             1/min : 100
C-rod trav.mm min: 8.70
            1/min : 350
Speed
                   : 7.40...7.60
C-rod trav.mm
CONSTANT REGULATION
             1/min : 385...495
Speed
SWITCH-OVER POINT
Speed
             1/min : 270 (290)
FUEL-DELIVERY CHARACTERISTICS
Speed
             1/min : 600
Del.quantity cm3/: 109.0...113.0
1000H.: (106.0...116.0)
             cm3/: 6.00
1000H.: (9.00)
Dispersion
             1/min : 1150
Speed
Del.quantity cm3/ : 84.0...87.0 *
             1000H.: (81.0...90.0)
              cm3/:6.00
Dispersion
             1000H.: (9.00)
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 140.0...160.0
1000H.: (136.0...164.0)
Remarks:
* = Set at reduced-delivery stop.
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,6 A 4
Edition : 13.05.87
Superceeded : 5.11.86
Calibrating oil : ISO-4113

Combination no. : 0 401 848 755

Injection pump

Pump designation : PE8P110A320L\$3802-10

EP type number : 0 411 818 710

Governor

Governor design. : RQ300/1150PA437-3 Governer no. : 0 421 801 230

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : 0M422

1st version kW : 184.0 Speed 1/min: 2300

TEST BENUA REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Over flow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening |

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 4.00...4.10 : (3.95...4.15) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 : 8- 7- 2- 6- 3- 5-Cam sequence SD ang. spacing CS: 0-45-90-135-180-225-270-315 Tolerance  $+ - \circ$  : 0.50 (0.75) SD mark cyl. no. : 8 BASIC SETTING 1/mi: 750 1st speed Contr.-rod trav.mm: 11.30...11.40 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.5...8.7 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.2) cm3/: 0.4 100H.: (0.7) Dispersion SLEEVE POSITION Control-lever position Degree: -1 17min: 650 Speed Cont.-rod travelmm: 13.20...14.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 750 Speed HIGHEST RATED SPEED Setting point: Speed 1/min : 650 Contr.-rod trav.mm: 13.6 Testing: 1st c-rod trav.mm : 10.00 Speed 1/min: 1195...1210 2nd c-rod trav.mm : 4.00 1/min : 1255...1285 1/min : 1350 Speed 4th speed C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 7.1 Testing: 1/min : 100 Speed

C-rod trav.mm min : 8.50

DO1

Speed 1/min: 300
C-rod trav.mm: 7.00...7.20
C-rod trav.mm: 2.00
Speed 1/min: 400...440

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1150
C-rod trav.mm: 11.00...11.10
2nd speed 1/min: 600

C-rod trav.mm : 11.20...11.40

FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 600
Del.quantity cm3/: 92.0...96.0
1000H.: (89.0...99.0)
Dispersion cm3/: 6.00
1000H.: (9.0)

STARTING FUEL DELIVERY

```
: 3.50...3.60
: (3.45...3.65)
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Prestroke mm
                                                    Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                                       : 1- 8- 4- 3-
                                                                                         6- 5-
                                                    Cam sequence
Test sheet
                  : FIA 17.2 D
Edition
                   : 22.05.87
Superceeded
                   : 22.10.86
Calibrating oil
                 : ISO-4113
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Combination no.
                  : 0 401 848 757
                                                                          270-315
                                                    Tolerance + - 0
                                                                        : 0.50 (0.75)
Injection pump
Pump designation : PE8P12OA92O/5LS3827
                                                    SD mark cyl. no. : 1
EP type number
                 : 0 411 828 712
                                                    BASIC SETTING
Governor
Governor design. : RQV300...900PA475-1
Governer no.
                  : 0 421 813 420
                                                    1st speed 1/mi: 900
                                                    Contr.-rod trav.mm: 12.60...12.70
Customer-spec. information
                  : IVECO-FIAT
Customer
                                                    Del.quantity cm3/: 21.4...21.6
Engine
                   : 8280.22.201
                                                                  100H.: (21.1...21.9)
1st version kW : 309.0
             1/min: 1800
                                                    Dispersion
                                                                  cm3/:0.5
Speed
TEST BENCH REQUIREMENTS
                                                                  100H.: (0.9)
                                                    2nd speed 1/min: 300.0
Contr.-rod trav. m: 5.0...5.2
Del.quantity cm3/: 1.7...2.3
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                  100H.: (1.4...2.6)
Overflow valve
                   : 1 417 413 025
                                                                  cm3/:0.6
                                                    Dispersion
                                                                  100H.: (1.0)
Inlet press., bar : 1.50
                                                    (B) Setting of injection pump with
                                                        externally-mounted governor
Calibrating nozzle-holder
                : 1 688 901 019
 assembly
                                                    SLEEVE TRAVELS
                                                    1st speed 1/min: 300
Opening
 pressure, bar
                  : 207...210
                                                      Sleeve travel mm: 1.40...1.80
                                                    2nd speed 1/min: 450
                                                    Sleeve travel mm: 3.60...4.00
3rd speed 1/min: 750
Perforated-plate
 diameter mm
                   : 0,8
                                                      Sleeve travel mm: 6.10...6.50
                                                    4th speed 1/min: 900
Sleeve travel mm: 7.70...7.90
Test inj. tubing
                  : 1 680 750 067
                                                    SLEEVE POSITION
Outside diameter
                                                    Control-lever position
x Wall thickness
                   : 6.00x1.50x1000
x Length mm
                                                                 Degree: -1
                                                                  17min: 960
                                                    Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                    1st version
                                                                  1/min: 900
START OF DELIVERY
                                                    Speed
                                                    Charge press. hPa: 900
Test pressure, bar: 25...27
```

```
Del.quantity cm3/: 214.0...216.0
             1000H.: (211.0...219.0)
            cm3/ : 5.00
Dispersion
             1000H.: (9.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 56...64
Testing:
1st c-rod trav.mm : 11.60
  Speed 1/min: 940...950
2nd c-rod trav.mm : 4.00
            1/min : 1050...1080
1/min : 1200
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 7...15
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 6.40
Speed
            1/min : 300
                  : 5.00...5.20
C-rod trav.mm
CONSTANT REGULATION
            1/min : 310...415
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
            hPa : 900
Pressure
Contr.-rod trav.mm: 12.60...12.70
Measurement
            1/min : 500
Speed
1st pressure hPa
                   : 9.00...9.30
 C-rod trav.mm
                  : 440
2nd pressure hPa
                  : 11.60...11.70
: 340
 C-rod trav.mm
3rd pressure hPa
  C-rod trav.mm
                   : 9.60...10.00
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
Speed 1/min: 550
Del.quantity cm3/: 229.0...237.0
1000H.: (226.0...240.0)
Charge press. hPa : -
```

1/min : 500

Del.quantity cm3/: 133.0...135.0 1000H.: (130.0...138.0)

STARTING FUEL DELIVERY

Speed 1/min: 100
Del.quantity cm3/: 170.0...200.0
1000H.: (166.0...204.0)
On activation of the starting solenoi

On activation of the starting solenoid, the start position must be reached.

Speed

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Note inst. in remarks column Prestroke mm : 4.00...4.10 : (3.95...4.15) Test\_sheet Contr.-rod trav.mm: 9.00...12.00 : MB 14,6 F 1 : 09.03.87 3-5-Edition : 8- 7- 2- 6-Cam sequence Superceeded 4- 1 : 10.85 Calibrating oil : ISO-4113 : 0 401 848 759 Combination no. SD ang. spacing CS: 0-45-90-135-180-225-270-315 Injection pump Tolerance + - 0 : 0.50 (0.75) Pump designation : PE8P120A320LS3811-10 EP type number : 0 411 828 714 Governor SD mark cyl. no. : 8 Governor design. : RQ300/1150PA556-1 Governer no. : 0 421 801 290 BASIC SETTING 1/mi: 1150 Customer-spec. information 1st speed Customer : DAIMLER-BENZ Contr.-rod trav.mm: 10.40...10.50 : 0M422A Engine Del.quantity cm3/ : 16.0...16.2 1st version kW : 243.0 1/min: 2300 100H.: (15.7...16.5) Speed TEST BENCH REQUIREMENTS Dispersion cm3/:0.5Calibrating-oil inlet temp. °C 100H.: (0.9) : 38...42 2nd speed 1/min: 300.0 Contri-rod trav\_m: 5.1...5.3 Overflow valve Del.quantity cm3/: 1.4...2.2 : 1 417 413 025 100H.: (1.1...2.5) cm3/: 0.8 100H.: (1.2) Inlet press., bar : 1.50 Dispersion Overflow quantity min. 1/h: 100...120 (B) Setting of injection pump with externally-mounted governor Calibrating nozzle-holder : 1 688 901 019 SLEEVE TRAVELS assembly 1st speed 1/min: 300 Sleeve travel mm: 3.30...3.50 Opening : 207...210 2nd speed 1/min: 650 pressure, bar Sleeve travel mm: 6.90...7.10 3rd speed 1/min: 1200 Sleeve travel mm: 7.20...7.60 Perforated-plate diameter mm : 0,8 4th speed 1/min: 1250 Sleeve travel mm: 9.00...9.50 Test inj. tubing : 1 680 750 067 SLEEVE POSITION Outside diameter Control-lever position Degree: 108 1/min: 600 x Wall thickness : 6.00x1.50x1000 x Length mm Speed Cont.-rod travelmm: 14.60...16.40 (A) Injection pump setting values Insp. values in parentheses FULL-LOAD DELIV. AT FULL-LOAD STOP Set constant delivery quant. per values 1st version 1/min: 1150 Speed

```
Del.quantity cm3/: 160.0...162.0
1000H.: (157.0...165.0)
Dispersion cm3/: 5.00
             1000H.: (9.00)
HIGHEST RATED SPEED
Setting point:
             1/min : 600
Speed
Contr.-rod trav.mm: 15.5
Testing:
1st c-rod trav.mm : 9.40
            1/min : 1195...1210
  Speed
2nd c-rod trav.mm : 4.00
             1/min : 1245...1275
  Speed
4th speed
             1/min : 1400
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Setting point w/out aux. spring
            1/min : 300
Speed
Contr.-rod trav.mm: 5.2
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 6.70
             1/min : 300
Speed
                  : 5.10...5.30
: 2.00
C-rod trav.mm
C-rod trav.mm
            1/min : 360...400
Speed
SWITCH-OVER POINT
             1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/: 152.0...158.0
1000H.: (149.0...161.0)
Dispersion cm3/: 8.00
             1000H.: (12.0)
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 140.0...160.0
             1000H.: (136.0...164.0)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       START OF DELIVERY
                                                       Test pressure, bar: 25...27
Note inst. in remarks column
                                                                            : 4.00...4.10
                                                       Prestroke mm
Test sheet
                                                                            : (3.95...4.15)
                    : MB 14,6 Q 8
                    : 13.05.87
                                                       Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8-7-2-6-3-5-
Edition
Superceeded
Calibrating oil : ISO-4113
                                                                              4- 1
Combination no.
                   : 0 401 848 760
Injection pump
                                                       SD ang. spacing CS: 0-45-90-135-180-225-
Pump designation : PEBP120A320L$3807-10 EP type number : 0 411 828 713
                                                                              270-315
                                                       Tolerance + - 0
                                                                            : 0.50 (0.75)
Governor
Governor design. : RQ300/1150PA546-10
                                                       SD mark cyl. no. : 8
Governer no.
                   : 0 421 801 376
                                                       BASIC SETTING
Customer-spec. information
                                                       1st speed
                                                                       1/mi: 1150
Customer
                    : DAIMLER-BENZ
                    : OM 422 A
                                                       Contr.-rod trav.mm: 10.70...10.80
Engine
1st version kW : 243.0
                                                       Del.quantity cm3/ : 15.9...16.1
              1/min: 2300
Speed
                                                                      100H.: (15.6...16.4)
TEST BENCH REQUIREMENTS
                                                                      cm3/:0.5
                                                       Dispersion
Calibrating-oil inlet temp. OC
                    : 38...42
                                                                      100H.: (0.9)
                                                       2nd speed 1/min: 300.0
Contr.-rod trav. m: 5.3...5.5
Del.quantity cm3/: 1.6...2.2
100H.: (1.3...2.5)
Overflow valve
                    : 1 417 413 025
Inlet press., bar : 1.50
                                                                      cm3/: 0.8
100H.: (1.2)
                                                       Dispersion
Overflow
 quantity min. 1/h: 100...120
                                                        (B) Setting of injection pump with
                                                            externally-mounted governor
Calibrating nozzle-holder
           : 1 688 901 019
 assembly
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 300
Sleeve travel mm: 1.60...1.80
Opening
                    : 207...210
 pressure, bar
                                                       2nd speed
                                                                     1/min: 650
Perforated-plate
                                                         Sleeve travel mm: 5.80...6.20
                                                                     1/min: 1150
                    : 0,8
                                                       3rd speed
diameter mm
                                                         Sleeve travel mm: 6.20...6.30
                                                       4th speed 1/min: 1200
                                                       Sleeve travel mm: 6.50...6.80
5th speed 1/min: 1270
Sleeve travel mm: 8.50...9.00
Test inj. tubing : 1 680 750 067
Outside diameter
x Wall thickness
                                                       SLEEVE POSITION
                   : 6.00x1.50x1000
x Length mm
                                                       Control-lever position
(A) Injection pump setting values
                                                                     Degree: 108
    Insp. values in parentheses
Set constant delivery quant.
                                                       Speed
                                                                     17min: 600
                                                       Cont.-rod travelmm: 19.20...20.80
    per values
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
```

1st version Speed 1/min: 1150 Charge press. hPa : 700 Del.quantity cm3/: 159.0...161.0 1000H.: (156.0...164.0) Dispersion cm3/: 5.00 1000H.: (9.00) HIGHEST RATED SPEED Setting point: 1/min : 600 Speed Contr.-rod trav.mm: 20.0 Testing: 1st c-rod trav.mm : 9.70 1/min: 1195...1210 Speed 2nd c-rod trav.mm : 4.00 1/min : 1255...1285 1/min : 1350 Speed 4th speed C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min : 300 Contr.-rod trav.mm: 5.4 Testing: Speed 1/min : 200 C-rod trav.mm min : 7.10 1/min : 300 Speed C-rod trav.mm : 5.30...5.50 : 2.00 C-rod trav.mm Speed 1/min : 370...420 TORQUE CONTROL Dimension a mm : 0.20 Torque-control curve - 1st version 1/min : 1150 1st speed C-rod trav.mm : 10.70...10.80 2nd speed 1/min: 750 C-rod trav.mm : 11.00...11.20 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : -Contr.-rod trav.mm: 10.00...10.30 Measurement 1/min : 500 Speed 1st pressure hPa : 450 C-rod tray.mm : 10.10...10.20 2nd pressure hPa : 500 : 10.50...10.70 C-rod trav.mm

008

SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 1/min: 750 Speed Del.quantity cm3/: 173.5...175.5 1000H.: (170.5...178.5) Dispersion cm3/: 8.00 1000H.: (12.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 138.0...140.0 1000H.: (135.0...143.0) cm3/:8.00Dispersion 1000H.: (12.0)

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 14,6 Q 7 : 09.03.87

Calibrating oil : ISO-4113

: 0 401 848 761 Combination no.

Injection pump

Pump designation : PE8P12OA32OLS3807-10 EP type number : 0 411 828 713

Governor

Governor design. : RQ300/1150PA546-9 Governer no. : 0 421 801 375

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M422 LA Engine

1st version kW : 276.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

```
START OF DELIVERY
Test pressure, bar: 25...27
                                                   1st version
                                                   Speed 1/min: 1150
Charge press. hPa: 700
                   : 4.00...4.10
Prestroke mm
                                                   Del.quantity cm3/: 175.0...177.0
1000H.: (172.0...180.0)
                   : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
                                                   Dispersion cm3/ : 5.00
                  : 8- 7- 2- 6- 3- 5-
Cam sequence
                                                                1000H.: (9.00)
                                                   HIGHEST RATED SPEED
SD ang. spacing CS: 0-45-90-135-180-225-
                                                   Setting point:
                     270-315
                                                   Speed 1/min : 600
Tolerance + - 0
                   : 0.50 (0.75)
                                                   Contr.-rod trav.mm: 20.0
                                                   Testing:
SD mark cyl. no. : 8
                                                   1st c-rod trav.mm : 10.50
BASIC SETTING
                                                     Speed 1/min: 1195...1210
                                                   2nd c-rod trav.mm : 4.00
                                                              1/min : 1255...1285
1/min : 1400
1st speed 1/mi: 1150
                                                     Speed
                                                   4th speed
Contr.-rod trav.mm: 11.50...11.60
                                                     C-rod trav.mm : 0.00...1.50
                                                   LOWEST RATED SPEED I
Del.quantity cm3/: 17.5...17.7
                                                   Setting point w/out aux. spring
                                                   Speed 1/min: 300
             100H.: (17.2...18.0)
                                                   Contra-rod trav.mm: 5.1
Dispersion
             cm3/:0.5
                                                   Testing:
                                                   Speed 1/min: 200
C-rod trav.mm min: 7.10
Speed 1/min: 300
             100H.: (0.9)
             1/min: 300.0
2nd speed
                                                   C-rod trav.mm : 5.00...5.20
C-rod trav.mm : 2.00
Contr.-rod trav. m: 5.0...5.2
Del.quantity cm3/ : 1.2...2.0
             100H.: (0.9...2.3)
                                                               1/min : 365...415
                                                   Speed
             cm3/: 0.8
100H.: (1.2)
Dispersion
                                                   TORQUE CONTROL
                                                   Dimension a mm : 0.20
(B) Setting of injection pump with externally-mounted governor
                                                   Torque-control curve - 1st version
                                                   1st speed 1/min : 1150
                                                     C-rod trav.mm : 11.50...11.60
                                                   2nd speed 1/min: 750
SLEEVE TRAVELS
1st speed 1/min: 300
                                                     C-rod tray.mm : 11.80...12.00
 Sleeve travel mm: 1.60...1.80
2nd speed 1/min: 600
                                                    compensator (LDA,ADA,ALDA)
Sleeve travel mm: 5.90...6.10
3rd speed 1/min: 1150
 Sleeve travel mm: 6.20...6.30
                                                   1st version
4th speed 1/min: 1210
                                                   Setting
 Sleeve travel mm: 6.50...6.80
                                                                1/min : 500
                                                   Speed
                                                               hPa : -
5th speed 1/min: 1270
                                                   Pressure
 Sleeve travel mm: 8.50...9.00
                                                   Contr.-rod trav.mm: 10.20...10.40
SLEEVE POSITION
                                                   Measurement
Control-lever position
                                                               1/min : 500
                                                   Speed
            Degree: 108
1/min: 600
                                                   1st pressure hPa : 410
Cont.-rod travelmm: 19.20...20.80
                                                    C-rod trav.mm : 10.50...10.60
                                                   2nd pressure hPa : 490
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                    C-rod trav.mm : 11.10...11.40
```

D10

```
SWITCH-OVER POINT
Speed
                1/min : 220 (240)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
Speed 1/min : 750
Speed 1/min: 750
Del.quantity cm3/: 187.0...190.0
1000H.: (184.0...193.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
Charge press. hPa : -
                 1/min : 500
Speed
Del.quantity cm3/: 137.0...139.0
                1000H.: (134.0...142.0)
                cm3/: 8.00
1000H.: (12.0)
Dispersion
STARTING FUEL DELIVERY
                1/min : 100
Speed
Del.quantity cm3/: 140.0...160.0
1000H.: (136.0...164.0)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded : MB 14,6 K 8 : 30.03.87 Calibrating oil : ISO-4113 Combination no. : 0 401 848 762 Injection pump Pump designation : PE8P12OA32OL\$3807-10 EP type number : Q 411 828 713 Governor Governor design. : RQV300...1150PA545-7 Governer no. : 0 421 813 595 Customer-spec. information Customer : DAIMLER-BENZ : OM 422 A Engine 1st version kW : 243.0 Speed 1/min: 2300 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Over flow quantity min. 1/h: 100...120 Calibrating nozzle-holder

assembly : 1 688 901 019

Opening : 207...210 pressure, bar

Perforated-plate diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

```
Speed 1/min: 1150
Charge press. hPa: 700
START OF DELIVERY
Test pressure, bar: 25...27
                                                       Del.quantity cm3/: 159.0...161.0
1000H.: (156.0...164.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                    : 4.00...4.10
Prestroke mm
                    : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
                    : 8- 7- 2- 6- 3- 5-
Cam sequence
                                                       HIGHEST RATED SPEED
                                                       1st version
                                                       Control-lever
                                                        position degrees: 46...54
SD ang. spacing CS: 0-45-90-135-180-225-
                      270-315
                                                       Testing:
Tolerance + - 0
                    : 0.50 (0.75)
                                                       1st c-rod trav.mm : 9.70
                                                         Speed 1/min: 1190...1200
SD mark cyl. no. : 8
                                                       2nd c-rod trav.mm : 4.00
                                                       Speed 1/min: 1270...1300
4th speed 1/min: 1400
BASIC SETTING
                                                         C-rod trav.mm : 0.00...1.00
                1/mi: 1150
1st speed
                                                       LOWEST RATED SPEED I
Contr.-rod trav.mm: 10.70...10.80
                                                       Control-lever
                                                        position degrees: 15...23
Del.quantity cm3/: 15.9...16.1
                                                       Testing:
               100H.: (15.6...16.4)
                                                                     1/min : 100
                                                       Speed
                                                       C-rod trav.mm min: 6.70
                                                       Speed 1/min: 300
Dispersion
              cm3/:0.5
                                                       C-rod trav.mm : 5.00...5.20
               100H.: (0.9)
                                                       CONSTANT REGULATION
                                                       Speed
                                                                    1/min : 300...400
2nd speed
              1/min: 300.0
Contr.-rod trav. m: 5.0...5.2
Del.quantity cm3/: 1.2...1.8
                                                       TORQUE CONTROL
              100H.: (0.9...2.1)
cm3/: 0.8
100H.: (1.2)
                                                       Torque-control curve - 1st version
                                                       1st speed 1/min: 1150
Dispersion
                                                       C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 750
(B) Setting of injection pump with externally-mounted governor
                                                         C-rod trav.mm : 11.00...11.20
                                                        compensator (LDA, ADA, ALDA)
SLEEVE TRAVELS
1st speed 1/min: 300
  Sleeve travel mm: 1.60...1.80
                                                       1st version
2nd speed 1/min: 800
                                                       Setting
Sleeve travel mm: 6.00...6.20

3rd speed 1/min: 1200

Sleeve travel mm: 8.00...8.20
                                                                    1/min : 500
                                                       Speed
                                                       Pressure hPa : -
                                                       Contr.-rod trav.mm: 10.00...10.30
4th speed 1/min: 1300
  Sleeve travel mm: 9.00...9.50
                                                       Measurement
                                                                    1/min : 500
                                                       Speed
SLERVE POSITION
Control-lever position
                                                       1st pressure hPa : 450
                                                       C-rod trav.mm : 10.10...10.20
2nd pressure hPa : 500
             Degree: -1
1/min: 1190
Speed
                                                         C-rod trav.mm : 10.50...10.70
Cont.-rod travelmm: 15.20...17.80
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                       SWITCH-OVER POINT
                                                       Speed 1/min: 220 (240)
1st version
```

## FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa: 700 Speed 1/min: 750 1/min: 750

Del.quantity cm3/: 173.5...175.5 1000H.: (170.5...178.5) Dispersion cm3/: 7.00 1000H.: (12.0) Charge press. hPa : 700

Charge press. hPa : -Speed 1/min : 5 1/min : 500

Del.quantity cm3/: 138.0...140.0 1000H.: (135.0...143.0) Dispersion cm3/: 7.00

1000H.: (12.0)

## STARTING FUEL DELIVERY

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : MB 14,6 R Edition : 13.05.87 Superceeded : 10.85 Calibrating oil : ISO-4113 Combination no. : 0 401 848 764 Injection pump Pump designation : PE8P110A320L\$3813-10 EP type number : 0 411 818 712 Governor Governor design. : RQ300/1150PA187-3 Governer no. : 0 421 801 133 Customer-spec. information Customer : DAIMLER-BENZ Engine : 0M422 1st version kW : 206.0 Speed 1/min: 2300 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Overflow quantity min. 1/h: 100...120 Calibrating nozzle-holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bar: 25...27

```
Prestroke mm
                     : 4.00...4.10
                     : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8- 7- 2- 6- 3- 5-
                       4- 1
SD ang. spacing CS: 0-45-90-135-180-225-
                       270-315
Tolerance + - 0
                   : 0.50 (0.75)
SD mark cyl. no. : 8
BASIC SETTING
1st speed
                1/mi: 1150
Contr.-rod trav.mm: 11.70...11.80
Del.quantity cm3/: 13.2...13.4
               100H.: (13.0...13.7)
Dispersion
               cm3/:0.4
               100H.: (0.8)
2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.9...8.1
Del.quantity cm3/: 1.5...2.1
100H.: (1.2...2.3)
Dispersion cm3/: 0.4
               100H.: (0.7)
SLEEVE POSITION
Control-lever position
             Degree: -1
1/min: 650
Speed
Cont.-rod travelmm: 13.00...14.00
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
               1/min: 1150
Speed
Del.quantity cm3/: 132.5...134.5
1000H.: (130.0...137.0)
Dispersion cm3/: 4.00
              1000H.: (8.00)
HIGHEST RATED SPEED
Setting point:
Speed 1/min: 650
Contr.-rod trav.mm: 13.5
Testing:
1st c-rod trav.mm: 10.70
  Speed 1/min: 1195...1210
2nd c-rod trav.mm : 4.00
```

1/min: 1240...1270 Speed 4th speed 1/min : 1350 C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min : 300 Contr.-rod trav.mm: 8.0 Testing: 1/min: 100 Speed C-rod trav.mm min: 9.60 Speed 1/min: 300 C-rod trav.mm : 7.90...8.10 C-rod trav.mm : 2.00 1/min : 420...460 Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 600 Del.quantity cm3/: 109.5...115.5 1000H.: (106.5...118.5) cm3/: 8.00 1000H.: (11.0) Dispersion STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 130.0...150.0 1000H.: (126.0...154.0)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    START OF DELIVERY
                                                    Test pressure, bar: 25...27
Note inst. in remarks column
                                                                       : 4.00...4.10
                                                    Prestroke mm
Test sheet
                   : MB 14,6 U 2
                                                                       : (3.95...4.15)
                                                    Contr.-rod trav.mm: 9.00...12.00
Edition
                   : 09.03.87
                                                                      : 8- 7- 2- 6- 3- 5-
Superceeded
                                                    Cam sequence
Calibrating oil
                  : ISO-4113
Combination no.
                   : 0 401 848 766
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Injection pump
                                                                         270-315
                  : PE8P120A320L$3816-10
Pump designation
                                                    Tolerance + - 0
                                                                       : 0.50 (0.75)
EP type number
                   : 0 411 828 715
Governor
Governor design. : RQ300/1150PA546-10
                                                    SD mark cyl. no. : 8
Governer no.
                   : 0 421 801 376
                                                    BASIC SETTING
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                    1st speed
                                                                  1/mi: 1150
                   : OM 422 A
                                                    Contr.-rod trav.mm: 10.70...10.80
Engine
                 : 243.0
                                                    Del.quantity cm3/: 15.9...16.1
1st version
             kW 
             1/min: 2300
Speed
                                                                 100H.: (15.6...16.4)
TEST BENCH REQUIREMENTS
                                                    Dispersion
                                                                 cm3/:0.5
Calibrating-oil inlet temp. OC
                   : 38...42
                                                                 100H.: (0.9)
                                                                 1/min: 300.0
Overflow valve
                                                    2nd speed
                   : 1 417 413 025
                                                    Contr.-rod trav. m: 4.9...5.1
                                                   Del.quantity cm3/: 1.2...1.8
Inlet press., bar : 1.50
                                                                 100H.: (0.9...2.1)
                                                                 cm3/: 0.8
100H.: (1.2)
                                                   Dispersion
Overflow
 quantity min. 1/h: 100...120
                                                    (B) Setting of injection pump with
                                                        externally-mounted governor
Calibrating nozzle-holder
                   : 1 688 901 019
 assembly
                                                    SLEEVE TRAVELS
Opening
                                                    1st speed 1/min: 300
                   : 207...210
                                                      Sleeve travel mm: 2.00...2.40
 pressure, bar
                                                    2nd speed 1/min: 650
                                                     Sleeve travel mm: 5.80...6.20 d speed 1/min: 1200 Sleeve travel mm: 6.50...6.90
Perforated-plate
                                                    3rd speed
 diameter mm
                   : 0,8
                                                    4th speed 1/min: 1250
Sleeve travel mm: 8.00...8.80
Test inj. tubing
                  : 1 680 750 067
ûutside diameter
                                                    SLEEVE POSITION
x Wall thickness
                                                    Control-lever position
x Length mm
                   : 6.00x1.50x1000
                                                                Degree: 45
                                                                 1/min: 600
                                                   Cont.-rod travelmm: 19.20...20.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                    1st version
D18
```

```
Speed
             1/min: 1150
Charge press. hPa : 700
Del.quantity cm3/: 159.0...161.0
            1000H.: (156.0...164.0)
            cm3/ : 5.00
1000H.: (9.00)
Dispersion
HIGHEST RATED SPEED
Setting point:
Speed
           1/min : 600
Contr.-rod trav.mm: 20.0
Testing:
1st c-rod trav.mm: 9.70
           1/min : 1195...1210
  Speed
2nd c-rod trav.mm : 4.00
          1/min : 1250...1280
  Speed
            1/min : 1350
4th speed
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Setting point w/out aux. spring
          1/min : 300
Speed
Contr.-rod trav.mm: 5.0
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 6.60
            1/min : 300
Speed
C-rod trav.mm
               : 4.90...5.10
           nm : 2.00
1/min : 365...415
C-rod trav.mm
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 1150
1st speed
  C-rod trav.mm : 10.70...10.80
2nd speed 1/min : 750
 C-rod trav.mm : 10.90...11.10
compensator (LDA,ADA,ALDA)
1st version
Setting
Speed
            1/min : 500
Pressure
           hPa
Contr.-rod trav.mm: 10.00...10.30
Measurement
            1/min : 500
Speed
1st pressure hPa : 450
 C-rod trav.mm : 10.10...10.20
2nd pressure hPa : 500
 C-rod trav.mm
                : 10.50...10.70
SWITCH-OVER POINT
           1/min : 220 (240)
Speed
```

D19

## FUEL-DELIVERY CHARACTERISTICS

1st version Charge press. hPa: 700 Speed 1/min: 750 Del.quantity cm3/: 173.5...175.5 1000H.: (170.5...178.5) Dispersion cm3/: 7.00 1000H.: (11.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 138.0...140.0 1000H.: (135.0...143.0) Dispersion cm3/: 7.00 1000H.: (11.0)

STARTING FUEL DELIVERY

1/min : 100 Speed Del.quantity cm3/: 140.0...160.0 1000H.: (136.0...164.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 14,7 D 1 : 10.12.86

Calibrating oil : ISO-4113

Combination no. : 0 401 848 782

Injection pump

Pump designation : PEBP110A320LS3842

EP type number : 0 411 818 714

Governor

Governor design. : RQV300...950PA829-1K

Governer no. : 0 421 815 167

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : 0M442

1st version kW : 206.0 1/min: 1900 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Over flow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Del.quantity cm3/: 133.0...135.0 1000H.: (130.5...137.5) Dispersion cm3/: 4.00 : 4.00...4.10 : (3.95...4.15) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 : 8- 7- 2- 6- 3- 5-1000H.: (8.00) Cam sequence 4- 1 HIGHEST RATED SPEED 1st version Control-lever SD ang. spacing CS: 0-45-90-135-180-225position degrees: 57...65 270-315 Tolerance + - 0 : 0.50 (0.75) Testing: 1st c-rod trav.mm : 12.50 Speed 1/min : 990...1000 SD mark cyl. no. : 8 2nd c-rod trav.mm: 4.00 Speed 1/min: 1095...1125 BASIC SETTING 4th speed 1/min: 1300 C-rod tray.mm : 0.00...1.50 1st speed 1/mi: 950 Contr.-rod trav.mm: 13.50...13.60 LOWEST RATED SPEED I Control-lever Del.quantity cm3/ : 13.3...13.5 position degrees: 14...22 100H.: (13.0...13.7) Testing: Speed 1/min : 100 C-rod trav.mm min : 10.50 Dispersion cm3/:0.4Speed 1/min: 300 C-rod tray.mm : 8.80...9.00 100H.: (0.8) 1/min: 300.0 CONSTANT REGULATION 2nd speed 1/min : 300...450 Contr.-rod trav. m: 8.8...9.0 Speed Del.quantity cm3/ : 1.5...2.1 TORQUE CONTROL 100H.: (1.2...2.3) cm3/: 0.4 100H.: (0.7) Torque-control curve - 1st version Dispersion 1st speed 1/min: 950 C-rod trav.mm : 13.50...13.60 2nd speed 1/min: 600 (B) Setting of injection pump with C-rod trav.mm : 12.90...13.10 3rd speed 1/min : 750 externally-mounted governor SLEEVE TRAVELS C-rod trav.mm : 13.20...13.40 1st speed 1/min: 300 Sleeve travel mm: 1.10...1.30
2nd speed 1/min: 500
Sleeve travel mm: 3.20...3.40
3rd speed 1/min: 800 SWITCH-OVER POINT Speed 1/min : 220 (240) FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 600
Del.quantity cm3/: 118.0...121.0
1000H.: (115.0...124.0)
Dispersion cm3/: 6.00 Sleeve travel mm: 5.90...6.10 4th speed 1/min: 1000 Sleeve travel mm: 8.00...8.40 5th speed 1/min: 1125 1000H.: (9.00)

Speed 1/min: 750

Del.quantity cm3/: 122.0...126.0
1000H.: (119.0...129.0)

Dispersion cm3/: 6.00
1000H.: (9.00) Sleeve travel mm: 9.60...10.00 SLEEVE POSITION Control-lever position Degree: -1 1/min: 975 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP STARTING FUEL DELIVERY 1st version 1/min: 950 Speed 1/min : 100 Speed 021

Del.quantity cm3/: 120.0...140.0 1000H.: (116.0...144.0) Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 14,7 D 3
Edition : 13.05.87
Superceeded : 28.10.86
Calibrating oil : ISO-4113

Combination no. : 0 401 848 784

Injection pump

Pump designation : PE8P110A320LS3842 EP type number : 0 411 818 714

Governor

Governor design. : RQV300...950PA524-11 Governor no. : 0 421 813 578

Customer-spec. information

Customer : DAIMLER-BENZ

Engine : 0M442

1st version kW : 191.0 Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10 : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 8- 7- 2- 6- 3- 5-4- 1 SD ang. spacing CS: 0-45-90-135-180-225-270-315 Tolerance  $+ - ^{\circ}$  : 0.50 (0.75) SD mark cyl. no. : 8 BASIC SETTING 1/mi: 950 1st speed Contr.-rod trav.mm: 12.00...12.10 Del.quantity cm3/: 11.8...12.0 100H.: (11.5...12.2) Dispersion cm3/:0.4100H.: (0.8) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.3...8.5 Del.quantity cm3/: 1.5...2.1 100H.: (1.2...2.3) Dispersion cm3/: 0.4 100H.: (0.7) (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 1.00...1.20 2nd speed 1/min: 550 Sleeve travel mm: 4.90...5.10 3rd speed 1/min: 1000 Steeve travel mm: 8.20...8.50
4th speed 1/min: 1050
Steeve travel mm: 9.10...9.40 SLEEVE POSITION Control-lever position Degree: -1 Speed 17min: 1000 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 950 Del.quantity cm3/: 118.0...120.0 1000H.: (115.5...122.5)

Dispersion cm3/ : 4.00 1000H.: (8.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 51...59 Testing: 1st c-rod trav.mm : 11.00 1/min : 990...1000 Speed 2nd c-rod trav.mm : 4.00 1/min : 1050...1080 1/min : 1300 Speed 4th speed C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Control-lever position degrees: 18...26 Testing: Speed 1/min : 100 C-rod trav.mm min: 10.00 Speed 1/min: 300 C-rod trav.mm : 8.30...8.50 CONSTANT REGULATION 1/min : 300...450 Speed SWITCH-OVER POINT Speed 1/min : 270 (290) FUEL-DELIVERY CHARACTERISTICS 1/min : 600 Speed Del.quantity cm3/: 108.0...112.0 1000H.: (105.0...115.0) cm3/: 6.00 1000H.: (11.0) Dispersion

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 120.0...140.0 1000H.: (116.0...144.0)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                   : 4.00...4.10
                                                 Prestroke mm
                                                                   : (3.95...4.15)
Note inst. in remarks column
                                                 Contr.-rod trav.mm: 9.00...12.00
                                                 Cam sequence : 8-7-2-6-3-5-
Test sheet
                                                                     4- 1
                 : MB 14,7 C 2
                  13.05.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                 SD ang. spacing CS: 0-45-90-135-180-225-
                                                                     270-315
Combination no.
                 : 0 401 848 786
                                                 Tolerance + - 0: 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320LS3842
                                                 SD mark cyl. no. : 8
EP type number : 0 411 818 714
                                                 BASIC SETTING
Governor
Governor design. : RQ300/1050PA827-3K
Governer no. : 0 421 803 095
                                                 1st speed
                                                              1/mi: 1050
                                                 Contr.-rod trav.mm: 12.90...13.00
Customer "spec. information
                 : DAIMLER-BENZ
Customer
                                                 Del.quantity cm3/: 13.2...13.4
                 : 0M442
Engine
                                                              100H.: (12.9...13.6)
1st version kW : 213.0
Speed
            1/min: 2100
                                                 Dispersion
                                                              cm3/:0.4
TEST BENCH REQUIREMENTS
                                                              100H.: (0.8)
Calibrating-oil inlet temp. °C
                                                              1/min: 300.0
                                                 2nd speed
                 : 38...42
                                                 Contr.-rod trav. m: 8.8...9.0
                                                 Del.quantity cm3/: 1.5...2.1
100H.: (1.2...2.3)
Overflow valve
                                                              cm3/: 0.4
100H.: (0.7)
                  : 1 417 413 025
                                                 Dispersion
Inlet press., bar : 1.50
                                                 (B) Setting of injection pump with
Overflow
                                                     externally-mounted governor
 quantity min. 1/h: 100...120
                                                 SLEEVE TRAVELS
Calibrating nozzle-holder
                                                 1st speed 1/min: 300
                 : 0 681 343 009
                                                   Sleeve travel mm: 1.60...1.80
assembly
                                                             1/min: 500
                                                 2nd speed
                                                   Sleeve travel mm: 5.50...5.70
Opening
                                                 3rd speed 1/min: 900
pressure, bar : 172...175
                                                   Sleeve travel mm: 7.00...7.30
                                                 4th speed 1/min: 1050
Sleeve travel mm: 7.60...7.90
Test inj. tubing : 1 680 750 015
                                                 5th speed 1/min: 1100
Outside diameter
                                                   Sleeve travel mm: 9.50...10.00
x Wall thickness
x Length mm
                  : 6.00X1.50X600
                                                 SLEEVE POSITION
                                                 Control-lever position
                                                             Degree: 108
1/min: 600
(A) Injection pump setting values
    Insp. values in parentheses
                                                 Speed
                                                 Cont.-rod travelmm: 16.30...17.30
    Set constant delivery quant.
   per values
                                                 FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
Test pressure, bar: 25...27
                                                 1st version
                                                             1/min: 1050
                                                 Speed
```

```
Del.quantity cm3/: 132.0...134.0
1000H.: (129.5...136.5)
Dispersion cm3/: 4.00
              1000H.: (8.00)
HIGHEST RATED SPEED
Setting roint:
             1/min : 600
Speed
Contr.-rod trav.mm: 16.8
Testing:
1st c-rod trav.mm : 11.90
  Speed
             1/min : 1095...1110
2nd c-rod trav.mm : 4.00
             1/min : 1160...1190
  Speed
             1/min : 1300
4th speed
  C-rod trav.mm : 0.00...1.50
LOWEST RATED SPEED I
Setting point w/out aux. spring
            1/min : 300
Speed
Contr.-rod trav.mm: 8.9
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 10.00
             1/min : 300
Speed
C-rod trav.mm
                    : 8.80...9.00
                    : 2.00
C-rod trav.mm
             1/min : 400...440
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1050
  C-rod trav.mm : 12.90...13.00
2nd speed 1/min : 600
C-rod trav.mm : 12.80...13.00
3rd speed 1/min : 750
  C-rod trav.mm : 13.20...13.40
FUEL-DELIVERY CHARACTERISTICS
Speed
             1/min : 600
Del.quantity cm3/: 119.0...122.0
1000H.: (116.0...125.0)
Dispersion cm3/: 8.00
1000H.: (11.0)
             1/min: 900
Speed
Del.quantity cm3/: 130.0...134.0
              1000H.: (127.0...137.0)
              cm3/:8.00
Dispersion
             1000H.: (-)
STARTING FUEL DELIVERY
Speed
             1/min : 100
Del.quantity cm3/: 140.0...160.0
             1000H.: (136.0...164.0)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : MB 14,6 E 3 : 09.03.87

Calibrating oil : ISO-4113

Combination no. : 0 401 848 787

Injection pump

Pump designation : PEBP110A320LS3802-10

EP type number : 0 411 818 710

Governor

Governor design. : RQ300/1150PA187-16

Governer no. : 0 421 801 385

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M422 Engine

1st version kW : 191.0 1/min: 2300 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Over flow

quantity min. 1/h: 100...120

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 4.00...4.10 : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 8- 7- 2- 6- 3- 5-SD ang. spacing CS: 0-45-90-135-180-225-270-315 Tolerance + - 0 : 0.50 (0.75) SD mark cyl. no. : 8 BASIC SETTING 1st speed 1/mi: 1150 Contr.-rod trav.mm: 11.00...11.10 Del.quantity cm3/ : 11.9...12.1 100H.: (11.6...12.3) Dispersion cm3/:0.4100H.: (0.8) 1/min: 300.0 2nd speed Contr.-rod trav. m: 8.0...8.2
Del.quantity cm3/: 1.5...2.1
100H.: (1.2...2.3)
Dispersion cm3/: 0.4
100H.: (0.7) SLEEVE POSITION Control-lever position Degree: -1
Speed 1/min: 650
Cont.-rod travelmm: 13.00...14.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1150 Speed Del.quantity cm3/: 119.0...121.0 1000H.: (116.5...123.5) Dispersion cm3/: 4.00 1000H.: (8.00) HIGHEST RATED SPEED Setting point: Speed 1/min: 650 Contr.-rod trav.mm: 13.5 Testing: 1st c-rod trav.mm : 10.00 Speed 1/min: 1195...1210

Speed 1/min : 1240...1270 4th speed 1/min: 1350 C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 8.1 Testing: Speed 1/min : 100 C-rod trav.mm min : 10.20 1/min : 300 Speed C-rod trav.mm : 8.00...8.20 C-rod trav.mm : 2.00 Speed 1/min : 420...460 Speed 1/min : 550 C-rod trav.mm max: 1.80 FUEL-DELIVERY CHARACTERISTICS 1/min : 600 Speed Del.quantity cm3/: 93.0...97.0 1000H.: (90.0...100.0) Dispersion cm3/: 8.00 1000H.: (11.0)

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 130.0...150.0 1000H.: (126.0...154.0)

Remarks:

E01

2nd c-rod trav.mm: 4.00

BOSCH INJ. PUMP TEST SPECIFICATIONS START OF DELIVERY Test pressure, bar: 25...27 Note inst. in remarks column : 4.00...4.10 Prestroke mm : (3.95...4.15) : MB 14.6 W Test sheet Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 8-7-2-6-3-5-: 09.03.87 Edition Superceeded Calibrating oil : ISO-4113 4- 1 : 0 401 848 788 Combination no. SD ang. spacing CS: 0-45-90-135-180-225-Injection pump Pump designation : PE8P12OA32OLS3816-11 270-315 Tolerance + - 0 EP type number : 0 411 828 720 : 0.50 (0.75) Governor Governor design. : RQV350...1150PA854 Governer no. : 0 421 813 602 SD mark cyl. no. : 8 BASIC SETTING Customer-spec. information 1/mi: 1150 : DAIMLER-BENZ Customer 1st speed Engine Contr.-rod trav.mm: 11.00...11.10 : 0M422A 1st version kW : 243.0 Del.quantity cm3/: 15.8...16.0 1/min: 2300 Speed 100H.: (15.5...16.3) TEST BENCH REQUIREMENTS cm3/:0.5Dispersion Calibrating-oil inlet temp. °C : 38...42 100H.: (0.9) 2nd speed 1/min: 350.0 Contr.-rod trav. m: 4.9...5.1 Del.quantity cm3/: 1.2...1.8 Overflow valve : 1 417 413 025 100H.: (0.9...2.1) Inlet press., bar : 1.50 cm3/:0.8Dispersion 100H.: (1.2) Over flow quantity min. 1/h: 100...120 SLEEVE POSITION Calibrating nozzle-holder Control-lever position assembly : 1 688 901 019 Degree: -1 17min: 1150 Speed Cont.-rod travelmm: 15.20...17.80 Opening pressure, bar : 207...210 FULL-LOAD DELIV. AT FULL-LOAD STOP Perforated-plate 1st version diameter mm : 0,8 Speed 1/min: 1150 Charge press. hPa: 700 Del.quantity cm3/: 158.0...160.0 Test inj. tubing : 1 680 750 067 1000H.: (155.0...163.0) cm3/ : 5.00 Outside diameter Dispersion x Wall thickness 1000H.: (9.00) : 6.00x1.50x1000 x Length mm HIGHEST RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Control-lever Set constant delivery quant. position degrees: 59...67 per values Testing: £03

1st c-rod trav.mm : 10.00 1/min: 1190...1200 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1270...1300 4th speed 1/min: 1400 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 6...14 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.00 1/min : 350 Speed : 4.90...5.10 C-rod trav.mm CONSTANT REGULATION 1/min: 370...480 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1050 C-rod trav.mm : 11.00...11.10 2nd speed 1/min: 850 C-rod trav.mm : 11.20...11.40 3rd speed 1/min : 750 : 11.30...11.50 C-rod trav.mm compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 700 Contr.-rod trav.mm: 11.50...11.70 Measurement 1/min : 500 Speed 1st pressure hPa : -: 10.50...10.60 C-rod trav.mm 2nd pressure hPa : 470 : 11.40...11.50 C-rod trav.mm 3rd pressure hPa : 400 C-rod trav.mm : 10.90...11.00 SWITCH-OVER POINT Speed 1/min : 270 (290) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 700 1/min : 600 Speed Del.quantity cm3/: 166.0...172.0 1000H.: (163.0...175.0) Dispersion cm3/: 8.00

1000H.: (12.0)

## STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 150.0...170.0 1000H.: (146.0...174.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : KHD 15,8 F : 09.03.87 Edition Superceeded : 3.85 Calibrating oil : ISO-4113 Combination no. : 0 401 849 703 Injection pump Pump designation : PE10P110A920/5L\$3073 : 0 411 819 701 EP type number Governor Governor design. : RQV300...1150PA549 : 0 421 813 277 Governer no. Customer-spec. information : KHD Customer : BF10L413F Engine 1st version kW : 265.0 1/min: 2050 Speed TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values START OF DELIVERY Test pressure, bar: 25...27 : 2.80...2.90 Prestroke mm : (2.75...2.95) Contr.-rod trav.mm: 9.00...12.00

: 1-10- 9- 4- 3- 6-5- 8- 7- 2 Cam sequence LOWEST RATED SPEED I Control-lever position degrees: 20...28 SD ang. spacing CS: 0-27-72-99-144-171-2 Testing: 16-243-288-315 1/min : 100 Speed Tolerance + - 0 : 0.50 (0.75) C-rod trav.mm min: 8.40 1/min : 300 Speed SD mark cyl. no. : 1 C-rod trav.mm : 6.90...7.10 BASIC SETTING CONSTANT REGULATION 1/min : 300...500 Speed 1st speed 1/mi: 700 TORQUE CONTROL Torque-control curve - 1st version Contr.-rod trav.mm: 12.00...12.10 1/min : 700 1st speed : 12.00...12.10 Del.quantity cm3/ : 14.4...14.6 C-rod trav.mm 1/min : 1150 2nd speed 100H.: (14.1...14.9) C-rod trav.mm : 10.70...10.90 1/min : 1050 3rd speed Dispersion cm3/:0.4C-rod trav.mm : 11.10...11.20 4th speed 1/min: 1025 C-rod trav.mm : 11.20...11.40 100H.: (0.7) 1/min: 300.0 compensator (LDA,ADA,ALDA) 2nd speed Contr.-rod trav. m: 6.9...7.1 Del.quantity cm3/: 1.8...2.4 100H.: (-) 1st version cm3/:0.4Setting Dispersion 100H.: (0.7) 1/min : 500 Speed hPa : 900 Pressure SLEEVE POSITION Contr.-rod trav.mm: 12.00...12.10 Control-lever position Degree: -1 Measurement 1/min : 500 17min: 1220 Speed Speed Cont.-rod travelmm: 15.20...17.80 1st pressure hPa : 10.00...10.20 FULL-LOAD DELIV. AT FULL-LOAD STOP C-rod trav.mm : 500 2nd pressure hPa C-rod trav.mm : 11.50...11.60 1st version 3rd pressure hPa : 350 Speed 1/min: 700 Charge press. hPa: 900 Del.quantity cm3/: 144.0...146.0 1000H.: (141.0...149.0) : 10.40...10.60 C-rod trav.mm SWITCH-OVER POINT cm3/ : 4.00 1/min : 220 (240) Dispersion Speed 1000H.: (7.50) FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -HIGHEST RATED SPEED 1/min : 500 1st version Speed Del.quantity cm3/: 98.0...102.0 1000H.: (95.0...105.0) Control-lever position degrees: 60...68 Testing: 1st c-rod trav.mm : 11.00 STARTING FUEL DELIVERY 1/min: 1190...1200 Speed 2nd c-rod trav.mm : 4.00 1/min : 1270...1300 Speed Speed 1/min : 100 Del.quantity cm3/: 130.0...160.0 1000H.: (-) 1/min : 1400 4th speed C-rod trav.mm : 0.00...1.00 E06

Remarks: On activation of the starting solenoid, the start position must be reached.

APPLICATION Maxidyne BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm : (3.95...4.15) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 : 10- 9- 4- 1- 8-- 6- 3- 5- 2 7 Cam sequence Test sheet : MB 18,3 D 1 Edition : 13.05.87 Superceeded : 28.10.86 : ISO-4113 Calibrating o.l. SD ang. spacing CS: 0-45-72-117-144-189-: 0 401 849 709 216-261-288-333 Combination no. Tolerance + - 0 : 0.50 (0.75) Injection pump Pump designation : PE10P110A320LS3818-1 SD mark cyl. no. : 10 EP type number : 0 411 819 703 BASIC SETTING Governor Governor design. : RQV350...1150PA678 Governer no. : 0 421 813 402 1st speed 1/mi: 1150 Contr.-rod trav.mm: 12.20...12.30 Customer-spec. information Customer : DAIMLER-BENZ Del.quantity cm3/: 12.6...12.8 : OM 423 Engine 100H.: (12.3...13.0) 1st version kW : 261.0 cm3/:0.4Speed 1/min: 2300 Dispersion TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. °C 1/min: 350.0 2nd speed : 38...42 Contr.-rod trav. m: 8.5...8.7 Del.quantity cm3/: 1.4...2.2 Overflow valve 100H.: (1.1...2.4) cm3/:0.4: 1 417 413 025 Dispersion 100H.: (0.7) Inlet press., bar: 1.50 SLEEVE POSITION Speed 1/min: 1200 Cont.-rod travelmm: 15.20...17.80 Overflow quantity min. 1/h: 130...150 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 681 343 009 assembly 1st version 1/min: 1150 Opening Speed pressure, bar : 172...175 Del.quantity cm3/: 126.0...128.0 1000H:: (123.5...130.5) cm3/: 4.00 1000H:: (8.00) Dispersion Test inj. tubing : 1 680 750 015 HIGHEST RATED SPEED Outside diameter x Wall thickness 1st version x Length mm : 6.00x1.50x600 Control-lever position degrees: 60...68 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1st c-rod trav.mm : 11.20 Speed 1/min : 1190...1200 per values 2nd c-rod trav.mm : 4.00 1/min : 1240...1270 START OF DELIVERY Speed 1/min : 1400 Test pressure, bar: 25...27 4th speed C-rod trav.mm : 0.00...1.00 E08

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 10...18
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 10.20
             1/min : 350
Speed
                   : 8.50...8.70
C-rod trav.mm
CONSTANT REGULATION
             1/min : 350...500
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed
           1/min : 1150
  C-rod trav.mm
                   : 12.20...12.30
2nd speed 1/min: 600
  C-rod trav.mm
                  : 12.80...13.00
3rd speed 1/min: 900
  C-rod trav.mm : 12.60...12.80
SWITCH-OVER POINT
             1/min : 270 (290)
Speed
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/ : 116.0...120.0
             1000H.: (113.0...123.0)
              cm3/:6.00
Dispersion
             1000H.: (9.00)
             1/min : 900
Speed
Del.quantity cm3/: 122.0...127.0
1000H.: (119.0...130.0)
Dispersion
              cm3/:6.00
             1000H.: (9.00)
             1/min : 1150
Speed
Del.quantity cm3/: 92.0...94.0 *
             1000H.: (89.0...97.0)
             cm3/: 6.00
1000H.: (9.00)
Dispersion
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 150.0...170.0
1000H.: (146.0...174.0)
Remarks:

★ = Set at reduced~delivery stop.
```

```
: 1-10- 9- 4- 3- 6-
5- 8- 7- 2
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence
Note inst. in remarks column
Test sheet
                   : KHD 15,8 Q
                   : 13.05.87
                                                     SD ang. spacing CS: 0-27-72-99-144-171-
Edition
Superceeded
                                                                           216-243-288-315
                                                     Tolerance + - 0
                                                                         : 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no. : 0 401 849 728
                                                     SD mark cyl. no. : 1
Injection pump
                                                     BASIC SETTING
Pump designation : PE10P110A920/5LS3138
                                                                    1/mi: 900
EP type number
                 : 0 411 819 707
                                                     1st speed
Governor
Governor design. : RQV425....900PA814
                                                     Contr.-rod trav.mm: 10.40...10.50
Governer no.
                   : 0 421 813 558
                                                     Del.quantity cm3/ : 9.4...9.6
Customer-spec. information
                                                                   100H.: (9.1...9.9)
Customer
                   : KHD
                                                                   cm3/:0.4
                   : F10L513 OPT.
                                                     Dispersion
Engine
                                                                   100H.: (0.7)
1st version kW : 188.0
              1/min: 1800
Speed
                                                     2nd speed
                                                                   1/min: 425.0
                                                     Contr.-rod trav. m: 5.9...6.1
TEST BENCH REQUIREMENTS
                                                     Del.quantity cm3/: 1.2...1.8
100H:: (0.9...2.0)
Dispersion cm3/: 0.4
100H:: (0.7)
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                                                      (B) Setting of injection pump with
                    : 1 417 413 025
                                                         externally-mounted governor
Inlet press., bar: 1.50
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 425
Sleeve travel mm: 1.50...1.60
Calibrating nozzle-holder
                : 0 681 343 009
 assembly
                                                     2nd speed 1/min: 460
Sleeve travel mm: 2.70...3.10
3rd speed 1/min: 500
Opening
pressure, bar : 172...175
                                                     3rd speed
                                                       Sleeve travel mm: 3.20...3.50
                                                     4th speed 1/min: 950
Test inj. tubing : 1 680 750 015
                                                       Sleeve travel mm: 8.40...8.60
                                                     5th speed 1/min: 1010
Sleeve travel mm: 9.50...9.70
Outside diameter
x Wall thickness
                                                     SLEEVE POSITION
x Length mm
                  : 6.00x1.50x600
                                                     Control-lever position
                                                                  Degree: -1
(A) Injection pump setting values
                                                                   17min: 950
    Insp. values in parentheses
Set constant delivery quant.
                                                     Speed
                                                     Cont.-rod travelmm: 15.20...17.80
    per values
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
                                                     1st version
Test pressure, bar: 25...27
                                                                   1/min: 900
                                                     Speed
                                                     Del.quantity cm3/: 94.0...96.0
Prestroke mm
                    : 3.10...3.20
                   : (3.05...3.25)
                                                                  1000H.: (91.0...99.0)
Contr.-rod trav.mm: 9.00...12.00
```

E10

```
Dispersion cm3/ : 4.00
            1000H.: (7.50)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 50...58
Testing:
1st c-rod trav.mm : 9.40
           1/min: 940...950
  Speed
2nd c-rod trav.mm : 4.00
            1/min: 980...1010
  Speed
            1/min : 1150
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 14...22
Testing:
Speed
            1/min : 100
C-rod trav.mm min: 7.40
           1/min : 425
Speed
                 : 5.90...6.10
C-rod trav.mm
CONSTANT REGULATION
            1/min : 435...490
Speed
TORQUE CONTROL
Dimension a mm : 0.30
Torque-control curve - 1st version
1st speed 1/min: 900
  C-rod trav.mm : 10.40...10.50
2nd speed 1/min: 550
  C-rod trav.mm : 10.70...10.80
3rd speed 1/min: 675
  C-rod trav.mm : 10.70...10.80
4th speed 1/min : 750
  C-rod trav.mm : 10.60...10.70
SWITCH-OVER POINT
            1/min : 340 (360)
Speed
FUEL-DELIVERY CHARACTERISTICS
            1/min : 675
Speed
Del.quantity cm3/: 96.0...100.0
1000H.: (94.0...102.0)
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 135.0...165.0
1000H.: (131.0...169.0)
On activation of the starting solenoid,
the start position must be reached.
```

**APPLICATION** 

Compressor

Cam sequence : 1-10- 9- 4- 3- 6- 5- 8- 7- 2 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : KHD 15.8 0 : 09.03.87 SD ang. spacing CS: 0-27-72-99-144-171-2 Edition Superceeded : 12.9.86 16-243-288-315 Tolerance + - 0 Calibrating oil : ISO-4113 : 0.50 (0.75) Combination no. : 0 401 849 729 SD mark cyl. no. : 1 BASIC SETTING Injection pump Pump designation : PE10P110A920/5L\$3073 EP type number : 0 411 819 701 1/mi: 1150 1st speed Governor Governor design. : RQV300...1150PA816 Contr.-rod trav.mm: 10.80...10.90 Governer no. : 0 421 813 559 Del.quantity cm3/ : 12.4...12.6 Customer-spec. information 100H.: (12.1...12.9) Customer : KHD : BF10L413F Dispersion cm3/:0.4Engine 1st version kW : 252.0 100H.: (0.7) 1/min: 2300 Speed 2nd speed 1/min: 300.0 TEST BENCH REQUIREMENTS Contr.-rod trav. m: 6.7...6.9 Del.quantity cm3/: 1.4...1.9 Dispersion cm3/: 0.4 100H.: (0.7) Calibrating-oil inlet temp. °C : 38...42 (B) Setting of injection pump with Overflow valve : 1 417 413 025 externally-mounted governor Inlet press., bar: 1.50 SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 1.30...1.40 Calibrating nozzle-holder 2nd speed 1/min: 390 Sleeve travel mm: 2.40...2.80 : 0 681 343 009 assembly 1/min: 450 Opening 3rd speed pressure, bar : 172...175 Sleeve travel mm: 2.80...3.20 4th speed 1/min: 1180 Sleeve travel mm: 8.30...8.40 : 1 680 750 015 5th speed 1/min: 1260 Test inj. tubing Sleeve travel mm: 9.10...9.30 Outside diameter SLEEVE POSITION x Wall thickness : 6.00x1.50x600 Control-lever position x Length mm Degree: -1 17min: 1190 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP per values \_\_\_\_ START OF DELIVERY 1st version Speed 1/min: 1150 Charge press. hPa: 700 Test pressure, bar: 25...27 Del.quantity cm3/: 124.0...126.0 Prestroke mm : 2.80...2.90 : (2.75...2.95) 1000H.: (121.0...129.0) Contr.-rod trav.mm: 9.00...12.00 E12

Dispersion cm3/ : 4.00 1000H.: (7.50) HIGHEST RATED SPEED 1st version Control-lever position degrees: 59...67 Testing: 1st c-rod trav.mm : 9.80 Speed 1/min: 1180...1190 2nd c-rod trav.mm: 4.00 Speed 1/min: 1265...1295 th speed 1/min: 1400 C-rod trav.mm: 0.00...1.00 4th speed LOWEST RATED SPEED I Control-lever position degrees: 15...23 Testing: 1/min : 100 Speed C-rod trav.mm min : 8.20 Speed 1/min : 300 : 6.70...6.90 C-rod trav.mm CONSTANT REGULATION 1/min : 320...480 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 700 Contr.-rod trav.mm: 10.80...10.90 Measurement 1/min : 500 Speed 1st pressure hPa : -: 9.90...10.00 C-rod trav.mm : 355 2nd pressure hPa : 10.60...10.70 C-rod trav.mm : 310 3rd pressure hPa C-rod trav.mm : 10.10...10.30 SWITCH-OVER POINT 1/min : 220 (240) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 1/min : 800 Speed Del.quantity cm3/: 119.0...123.0 1000H.: (116.0...126.0) Charge press. hPa : -

1/min : 500

Speed

E13

Del.quantity cm3/: 98.0...102.0 1000H.: (96.0...104.0)

STARTING FUEL DELIVERY

Speed 1/min : 100 Del.quantity cm3/ : 130.0...160.0

On activation of the starting solenoid,

the start position must be reached.

APPLICATION Excavator

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      START OF DELIVERY
Note inst. in remarks column
                                                      Test pressure, bar: 25...27
Test sheet
Edition
Superceeded
                  : MB 18.3 E 4
: 16.06.87
                                                                          : 4.00...4.10
: (3.95...4.15)
                                                      Prestroke mm
                  : 5.11.86
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                                         : 10- 9- 4- 1-
                                                                                                7
Calibrating oil : ISO-4113
                                                      Cam sequence
                    : 0 401 849 733
Combination no.
Injection pump
                                                      SD ang. spacing CS: 0-45-72-117-144-189-
Pump designation : PE10P120A320LS3824-
                                                                            216-261-288-333
                      10
                                                      Tolerance + - 0
EP type number
                    : 0 411 829 701
                                                                          : 0.50 (0.75)
Governor
Governor design. : RQ300/1150PA546-9
                                                      SD mark cyl. no. : 10
                   : 0 421 801 371
Governer no. `
                                                      BASIC SETTING
Customer-spec. information
Customer
                                                      1st speed 1/mi: 1150
                   : DAIMLER-BENZ
                                                      Contr.-rod trav.mm: 11.00...11.10
Engine
                    : OM 423 LA
1st version kW : 301.0
                                                      Del.quantity cm3/: 15.2...15.4
              1/min: 2300
Speed
                                                                    100H.: (14.9...15.7)
TEST BENCH REQUIREMENTS
                                                                    cm3/:0.5
                                                      Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                    100H.: (0.8)
Overflow valve
                                                                    1/min: 300.0
                                                      2nd speed
                                                     Contr.-rod trav. m: 5.0...5.2
                    : 1 417 413 025
                                                      Del.quantity cm3/ : 1.6...2.2
                                                                    100H.: (1.3...2.5)
cm3/: 0.8
100H.: (1.2)
Inlet press., bar : 1.50
                                                      Dispersion
Overflow
 quantity min. 1/h: 130...150
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Calibrating nozzle-holder
                  : 1 688 901 019
 assembly
                                                      SLEEVE TRAVELS
Opening
                                                      1st speed 1/min: 100
                                                     Sleeve travel mm: 0.00...0.50
2nd speed 1/min: 300
2ieeve travel mm: 2.60...2.70
                    : 207...210
pressure, bar
Perforated-plate
                                                      3rd speed 1/min: 600
Sleeve travel mm: 5.90...6.00
diameter mm
                    : 0,8
                                                      4th speed 1/min: 1150
Test inj. tubing : 1 680 750 067
                                                        Sleeve travel mm: 5.90...6.00
                                                      SLEEVE POSITION
Outside diameter
x Wall thickness
                                                     Control-lever position
                                                                  Degree: -2
1/min: 600
x Length mm
                   : 6.00x1.50x1000
                                                     Speed
                                                     Cont.-rod traveimm: 19.20...20.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
```

```
1st version
              1/min: 1150
Speed
Charge press. hPa : 700
Del.quantity cm3/: 152.0...154.0
1000H.: (149.0...157.0)
Dispersion cm3/: 5.00
1000H.: (8.00)
HIGHEST RATED SPEED
Setting point:
Speed
         1/min : 600
Contr.~rod trav.mm: 20.0
Testing:
1st c-rod trav.mm : 10.10
           1/min : 1195...1210
  Speed
2nd c-rod trav.mm : 4.00
           1/min : 1250...1280
  Speed
4th speed 1/min : 1350
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 6...14
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 6.50
            1/min : 300
mm : 5.00...5.20
mm : 2.00
Speed
C-rod trav.mm
C-rod trav.mm
             1/min : 360...400
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1150
C-rod trav.mm: 11.00...11.10
2nd speed 1/min: 750
  C-rod trav.mm : 11.60...11.80
 compensator (LDA,ADA,ALDA)
1st version
Setting
Speed
             1/min : 500
             hPa
Pressure
Contr.-rod trav.mm: 10.40...10.60
Measurement
             1/min : 500
Speed
1st pressure hPa : 360
  C-rod trav.mm : 10.50...10.60
2nd pressure hPa : 420
  C-rod tray.mm : 10.90...11.10
SWITCH-OVER POINT
             1/min : 220 (240)
Speed
```

E15

```
FUEL-DELIVERY CHARACTERISTICS
```

1st version
Charge press. hPa: 700
Speed 1/min: 750
Del.quantity cm3/: 169.0...172.0
1000H.: (166.0...175.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
Charge press. hPa: Speed 1/min: 500
Del.quantity cm3/: 134.0...136.0
1000H.: (131.0...139.0)
Dispersion cm3/: 8.00
1000H.: (12.0)

## STARTING FUEL DELIVERY

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: MB 18,3 E 5 : 30.03.87 Test sheet Edition Superceeded

Calibrating oil : ISO-4113

: 0 401 849 736 Combination no.

Injection pump

Pump designation : PE10P120A320LS3824-1

EP type number : 0 411 829 701

Governor

Governor design. : R@300/1050PA859 Governer no. : 0 421 801 394

Customer-spec. information

Customer : DAIMLER-BENZ

: OM 423 LA Engine

1st version kW : 368.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Overflow

quantity min. 1/h: 130...150

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY Test pressure, bar: 25...27 1st version Speed 1/min: 1150 Charge press. hPa: 700 : 4.00...4.10 Prestroke mm Del.quantity cm3/: 183.0...185.0 1000H.: (180.0...188.0) : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 10- 9- 4- 1- 8- 7 - 6- 3- 5- 2 Dispersion cm3/ : 5.00 1000H.: (8.00) HIGHEST RATED SPEED SD ang. spacing CS: 0-45-72-117-144-189-Setting point: 216-261-288-333 Speed 1/min : 600 Tolerance + - 0: 0.50 (0.75) Contr.-red trav.mm: 20.0 SD mark cyl. no. : 10 Testing: 1st c-rod trav.mm : 10.70 Speed 1/min: 1195...1210 BASIC SETTING 2nd c-rod trav.mm : 4.00 Speed 1/min : 1245...1275 4th speed 1/min : 1350 1st speed 1/mi: 1150 C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 11.70...11.80 Del.quantity cm3/: 18.3...18.5 LOWEST RATED SPEED I Setting point w/out aux. spring Speed 1/min: 300 100H.: (18.0...18.8) Contr.-rod trav.mm: 5.1 cm3/:0.5Dispersion Testing: 100Ha: (0.8) 1/min : 100 Speed C-rod trav.mm min : 6.50 Speed 1/min : 300 1/min: 300.0 2nd speed Contr.-rod trav. m: 5.0...5.2

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.5)

Dispersion cm3/: 0.8

100H.: (1.2) C-rod trav.mm : 5.00...5.20 C-rod trav.mm : 2.00 1/min : 360...400 Speed compensator (LDA, ADA, ALDA) (B) Setting of injection pump with externally-mounted governor 1st version Setting Speed 1/min: 500 Pressure hPa: 700 SLEEVE TRAVELS 1st speed 1/min: 100
Sleeve travel mm: 0.10...0.50
2nd speed 1/min: 300
Sleeve travel mm: 2.50...2.80 Contr.-rod trav.mm: 11.70...11.80 Measurement 1/min : 500 3rd speed 1/min: 600 Speed Steeve travel mm: 5.90...6.00 4th speed 1/min: 1200 1st pressure hPa : -Sleeve travel mm: 6.20...6.60 C-rod trav.mm : 10.00...10.20 2nd pressure hPa : 390 C-rod trav.mm : 10.40...10.60 3rd pressure hPa : 520 Sth speed 1/min: 1270 Sleeve travel mm: 8.80...9.20 C-rod trav.mm : 11.40...11.50 SLEEVE POSITION Control-lever position Degree: 108 1/min: 600 SWITCH-OVER POINT Speed 1/min: 220 (240) Speed Cont.-rod travelmm: 19.20...20.80 FUEL-DELIVERY CHARACTERISTICS FULL-LOAD DELIV. AT FULL-LOAD STOP

£17

```
1st version
Charge press. hPa: 700
Speed 1/min: 750
Del.quantity cm3/: 186.0...192.0
1000H.: (183.0...195.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
Charge press. hPa: -
Speed 1/min: 500
Del.quantity cm3/: 138.0...141.0
1000H.: (135.0...144.0)
Dispersion cm3/: 8.00
1000H.: (12.0)
```

## STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 150.0...170.0 1000H.: (146.0...174.0)

, distribili

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : STE 10.0 D2 : 09.03.87 : 10.83 Calibrating oil : ISO-4113

: 0 401 856 155 Combination no.

Injection pump

Pump designation : PE6P110A321RS157-1

EP type number : 0 411 816 157

Governor

Governor design. : RQ250...1100PA692 Governer no. : 0 421 801 240

Customer-spec. information Customer : STEYR

: 9 FU-A Engine

1st version kW : 184.0 Speed 1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 2.00...2.10 Prestroke mm : (1.95...2.15)

Contr.-rod trav.mm: 9.00...12.00

```
Cam sequence
               : 1-5-3-6-2-4
                                                      Setting point w/out aux, spring
                                                      Speed
                                                                   1/min : 250
                                                       Contr.-rod trav.mm: 6.0
SD ang. spacing ^{0}CS: 0-60-120-180-240-300
Tolerance + - ^{0}: 0.50 (0.75)
                                                       Testing:
                                                      Speed 1/min: 100
C-rod trav.mm min: 7.40
Speed 1/min: 250
SD mark cyl. no. : 1
                                                       C-rod trav.mm : 5.90...6.10
                                                                    nm : 2.00
1/min : 335...375
BASIC SETTING
                                                       C-rod trav.mm
                                                       Speed
1st speed
               1/mi: 1100
                                                       TORQUE CONTROL
Contr.-rod trav.mm: 10.20...10.30
                                                      Dimension a mm : 0.55
                                                       Torque-control curve - 1st version
                                                       1st speed 1/min : 1100
C-rod trav.mm : 10.20...10.30
Del.quantity cm3/ : 13.4...13.6
               100H.: (13.1...13.9)
                                                                   1/min: 900
                                                      2nd speed
                                                         C-rod trav.mm : 10.70...10.90
                                                       3rd speed 1/min: 700
Dispersion
              cm3/:0.4
                                                         C-rod trav.mm
                                                                           : 11.10...11.30
                                                       4th speed 1/min: 550
              100H.: (0.7)
                                                         C-rod trav.mm
                                                                           : 11.30...11.50
2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.9...6.1
                                                        compensator (LDA,ADA,ALDA)
Del.quantity cm3/: 1.7...2.2
              cm3/: 0.4
100H.: (0.7)
Dispersion
                                                      1st version
                                                      Setting
SLEEVE POSITION
                                                      Speed
                                                                    1/min : 500
Control-lever position
                                                                    hPa : 700
                                                      Pressure
             Degree: 101
1/min: 600
                                                      Contr.-rod trav.mm: 10.70...10.90
Speed
Cont.-rod travelmm: 15.20...20.80
                                                      Measurement
                                                                    1/min : 500
                                                      Speed
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                      1st pressure hPa : -
                                                                           : 9.50...9.60
                                                         C-rod trav.mm
1st version
Speed 1/min: 1100
Charge press. hPa: 700
                                                      2nd pressure hPa : 520
                                                      C-rod trav.mm : 10.50...10.60
3rd pressure hPa : 420
Del.quantity cm3/: 134.0...136.0
1000H:: (131.0...139.0)
Dispersion cm3/: 4.00
                                                         C-rod trav.mm
                                                                           : 9.80...10.00
                                                      SWITCH-OVER POINT
             1000H.: (7.50)
                                                                    1/min : 170 (190)
                                                      Speed
HIGHEST RATED SPEED
                                                      FUEL-DELIVERY CHARACTERISTICS
Setting point:
Speed
            1/min : 600
                                                      1st version
                                                      Charge press. hPa: 700
Contr. rod trav.mm: 20.0
                                                                    1/min : 550
                                                      Speed
                                                      Del.quantity cm3/: 138.0...142.0
Testing:
                                                                    1000H.: (135.0...145.0)
1st c-rod trav.mm : 9.20
            1/min : 1165...1160
                                                                    1/min : 500
                                                      Speed
  Speed
                                                      Del.quantity cm3/: 106.0...110.0
1000H.: (103.0...113.0)
2nd c-rod trav.mm : 4.00
             1/min : 1200...1230
1/min : 1350
  Speed
4th speed
  STARTING FUEL DELIVERY
LOWEST RATED SPEED I
```

E20

Speed 1/min: 100
Del.quantity cm3/: 140.0...160.0
Remarks:
APPLICATION
Omnibus

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : STE 10,0 D3
                    : 09.03.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no.
                    : 0 401 856 157
                                                      BASIC SETTING
Injection pump
                                                                     1/mi: 1100
                                                      1st speed
Pump designation : PE6P110A321RS157-1
EP type number
                    : 0 411 816 157
                                                      Contr.-rod trav.mm: 11.10...11.20
Governor
Governor design.
                    : RQ250...1100PA692-1
                                                      Del.quantity cm3/ : 14.5...14.7
Governer no.
                    : 0 421 801 393
                                                                    100H.: (14.2...15.0)
Customer-spec. information
                                                                    cm3/:0.4
Customer
                   : STEYR
                                                      Dispersion
Engine
                    : 9 FU-A
                                                                    100H.: (0.7)
1st version kW : 206.0
                                                                    1/min: 250.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.2...6.4
Speed
              1/min: 2200
                                                      Del.quantity cm3/: 1.3...1.8
100H.: (-)
TEST BENCH REQUIREMENTS
                                                                    cm3/: 0.4
100H.: (0.7)
                                                      Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                      SLEEVE POSITION
Overflow valve
                                                      Control-lever position
                                                                   Degree: 45...47
1/min: 600
                    : 1 417 413 025
                                                      Speed
Inlet press., bar: 1.50
                                                      Cont.-rod travelmm: 19.20...20.80
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                      1st version
                                                      Speed 1/min: 1100
Charge press. hPa: 700
Del.quantity cm3/: 145.0...147.0
1000H.: (142.0...150.0)
Opening
pressure, bar : 172...175
                                                                   cm3/ : 4.00
Test inj. tubing : 1 680 750 015
                                                      Dispersion
                                                                   1000H.: (7.50)
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
x Length mm
                   : 6.00x1.50x600
                                                      Setting point:
(A) Injection pump setting values
                                                                  1/min : 600
    Insp. values in parentheses
Set constant delivery quant.
                                                      Contr.-rod trav.mm: 20.0
    per values
                                                      Testing:
                                                      1st c-rod trav.mm : 10.10
START OF DELIVERY
                                                        Speed 1/min: 1145...1160
                                                      2nd c-rod trav.mm : 4.00
Test pressure, bar: 25...27
                                                                  1/min : 1205...1235
1/min : 1350
                                                        Speed
                    : 2.00...2.10
: (1.95...2.15)
Prestroke mm
                                                      4th speed
                                                        C-rod trav.mm : 0.00...1.00
Contr.-rod trav.mm: 9.00...12.00
E22
```

```
LOWEST RATED SPEED I
Setting point w/out aux. spring
            1/min : 250
Speed
Contr.-rod trav.mm: 6.3
Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.70
Speed
           1/min : 250
C-rod trav.mm
                : 6.20...6.40
                 : 2.00
C-rod trav.mm
           1/min : 340...380
Speed
TORQUE CONTROL
Dimension a mm : 0.50
Torque-control curve - 1st version
1st speed 1/min : 1100
  C-rod trav.mm : 11.10...11.20
2nd speed 1/min: 500
  C-rod trav.mm : 12.20...12.30
3rd speed 1/min: 840
  C-rod trav.mm : 11.30...11.50
4th speed 1/min: 720
  C-rod trav.mm : 12.00...12.20
 compensator (LDA,ADA,ALDA)
1st version
Setting
Speed
            1/min : 500
            hPa : 700
Pressure
Contr.-rod trav.mm: 12.20...12.30
Measurement
            1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm : 8.70...8.90
2nd pressure hPa : 380
 C-red trav.mm : 11.50...11.60
3rd pressure hPa : 135
  C-rod trav.mm : 9.80...10.00
SWITCH-OVER POINT
          1/min : 170 (190)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
            1/min : 500
Speed
Del.quantity cm3/: 161.0...165.0
            1000H.: (158.0...168.0)
Charge press. hPa : -
           1/min : 500
Speed
Del.quantity cm3/: 84.0...88.0
1000H:: (81.0...91.0)
```

## STARTING FUEL DELIVERY

Speed 1/min : 100
Del.quantity cm3/ : 155.0...185.0

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : SCA 11.0 R4
Edition : 26.6.87
Superceeded : 1.85
Calibrating oil : ISO-4113

Combination no. : 0 401 876 720

Injection pump

Pump designation : PE6P110A720RS3040

EP type number : 0 411 816 713

Governor

Governor design. : RSV350...1100P1/481

Governer no. : 0 421 833 121

Customer-spec. information Customer : SCANIA

: DS11 05 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6,00X1,50X600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.30...3.40 : (3.25...3.45)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4

SD ang. spacing CS: 0-60-120-180-240-300 SD mark cyl. no. : 1 BASIC SETTING 1/mi: 1100 1st speed Contr.-rod trav.mm: 13.10...13.20 Del.quantity cm3/: 15.6...15.8 100H.: (15.4...16.0) Dispersion cm3/:0.6100H.: (0,8) SLEEVE POSITION Control-lever position Degree: -1 Speed 17min: 800 Cont.-rod travelmm: 0.30...1.00 Governor-spring reload Notch setting x : 6.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1100 Speed Del.quantity cm3/: 156.0...158.0 1000H.: (154.0...160.0) cm3/ : 6.9 1000H.: (8.0) Dispersion HIGHEST RATED SPEED 1st version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm : 12.10 1/min : 1140...1150 2nd c-rod trav.mm : 4.00 Speed 1/min: 1210...1240 4th speed 1/min: 1350 C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I Control-lever position degrees: 26...34 Setting point w/out aux. spring Speed 1/min : 350 Contr.-rod trav.mm: 4.00 1/min : 350 Speed C-rod trav.mm : 4.40...4.50 C-rod trav.mm : 2.00 1/min : 440...500 Speed

FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 700 Del.quantity cm3/: 156.5...161.5 1000H.: (154.0...164.0)

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 240.0...290.0 1000H.: (-)

Remarks:
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION

Check and set without ROBO diaphragam

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania on August 29, 1983 Start of delivery - engine: 20° before TDC Firing sequence of engine: 1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)Note inst. in remarks column Test sheet : SCA 11,0 Y1 SD mark cyl. no. : 1 : 21.05.87 Edition Superceeded : 7.85 BASIC SETTING Calibrating oil : ISO-4113 1st speed 1/mi: 600 Combination no. : 0 401 876 728 Contr.-rod trav.mm: 12.40...12.50 Injection pump Del.guantity cm3/: 11.9...12.1 Pump designation : PE6P110A720RS3115 EP type number : 0 411 816 735 100H.: (11.7...12.3) Governor Governor design. : RSV350...1100P1/481 Governer no. : 0 421 833 121 cm3/:0.5Dispersion 100h.: (0.7) Customer-spec. information : SAAB-SCANIA Customer 2nd speed 1/min: 350.0 Contr.-rod trav. m: 5.1...5.3 Del.quantity cm3/: 2.0...2.4 100H.: (-) Engine : DN11 01 TEST BENCH REQUIREMENTS cm3/:0.2Dispersion Calibrating-oil inlet temp. °C 100H.: (0.4) : 38...42 SLEEVE POSITION Control-lever position Overflow valve : 1 417 413 025 Degree: -3 1/min: 800 Cont.-rod travelmm: 0.30...1.00 Inlet press., bar : 1.50 Governor-spring reload Calibrating nozzle-holder : 0 681 343 009 assembly Notch setting x : 6.00 FULL-LOAD DELIV. AT FULL-LOAD STOP Opening. pressure, bar : 172...175 1st version 1/min: 600 Speed Del.quantity cm3/: 119.0...121.0 1000H.: (117.0...123.0) Dispersion cm3/: 5.00 1000H.: (7.00) Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 HIGHEST RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. Control-lever position degrees: 62...70 per values Testing: 1st c-rod trav.mm : 11.40 START OF DELIVERY Speed 1/min: 1140...1150 Test pressure, bar: 25...27 2nd c-rod trav.mm : 4.00 Speed 1/min: 1210...1240 4th speed 1/min: 1370 : 3.30...3.40 Prestroke mm : (3.25...3.45) Contr.-rod trav.mm: 9.00...12.00 C-rod trav.mm : 0.30...1.70 Cam sequence : 1-5- 3- 6- 2- 4 LOWEST RATED SPEED I Control-lever

```
position degrees: 27...35
Setting point w/out aux. spring
            1/min : 350
Speed
Contr.-rod trav.mm: 4.7
           1/min : 350
Speed
C-rod trav.mm
               : 4.60...4.80
C-rod trav.mm
                 : 2.00
           1/min: 470...530
Speed
FUEL-DELIVERY CHARACTERISTICS
            1/min : 1100
Speed
Del.quantity cm3/: 119.5...124.5
            1000H.: (117.0...127.0)
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 240.0...290.0
            1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
Speed
            1/min : 350
Contr.-rod trav.mm: 5.10...5.30
Del.quantity cm3/: 20.0 ... 24.0
             cm3/ : 2.00
Dispersion
            1000H.: (4.00)
Remarks:
Delivery-valve spring pre-tension 3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION
Check and set without ROBO diaphragam
For comb. With letter index see
VDT-I-400/116.
For sealing see VDT-I-400/117.
Scania test specifications taken over
on Aug. 22, 1983
Start of delivery - engine: 210 before
TDC
```

Firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1-6-3-5-2-4
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing ^{\circ}CS: 0-75-120-195-240-315 Tolerance + - ^{\circ}: 0.50 (0.75)
                    : MB 11,0 E 2
                    : 9.86
                   : 3.85
Superceeded
Calibrating oil : ISO-4113
                                                      SD mark cyl. no. : 6
Combination no.
                    : 0 401 876 733
                                                      BASIC SETTING
                                                                     1/mi: 1130
Injection pump
                                                      1st speed
Pump designation : PE6P120A320LS3810-10
                                                      Contr.-rod trav.mm: 10.60...10.70
Governor
                  : RSV350...1150P0A810
Governor design.
                                                      Del.quantity cm3/: 16.3...16.5
Customer-spec. information
                   : DAIMLER-BENZ
                                                                     100H.: (16.0...16.8)
Customer
Engine
                    : OM 421 A
                                                      Dispersion
                                                                    cm3/: 0.50
1st version kW : 184.0
                                                                     100H.: (0.75)
Speed
              1/min: 2300
                                                      2nd speed 1/min: 350
Contr.-rod trav. m: 4.70...4.90
TEST BENCH REQUIREMENTS
                                                      Del.quantity cm3/: 1.6...2.2
Calibrating-oil inlet temp. C
                                                                     100H.: (-)
                                                                    cm3/: 0.8
100H.: (1.2)
                   : 38...42
                                                      Dispersion
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                                   Degree: -3
1/min: 800
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                      Cont.-rod travelmm: 0.30...1.00
 assembly
                : 1 688 901 019
                                                      Governor-spring reload_
Opening
                                                      Notch setting x : 4.75
 pressure, bar
                  : 207...210
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
                    : 0,8
 diameter mm
                                                      1st version
                                                                    1/min: 1130
                                                      Speed
                                                      Del.quantity cm3/: 163.0...165.0
                                                                   1000H.: (160.0...168.0)
cm3/ : 5.0
1000H.: (9.0)
Test inj. tubing : 1 680 750 067
                                                      Dispersion
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
                    : 6,00x1,50x1000
x Length mm
                                                      1st version
                                                      Control-lever
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       position degrees: 52...60
    per values
                                                      Testing:
                                                      1st c-rod trav.mm : 9.60
Speed 1/min : 1175...1185
2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                                 1/min : 1250...1270
Prestroke mm
                    : 4.00...4.10
                                                      3rd c-rod trav.mm : 0.30...1.40
                    : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
                                                        Speed 1/min: 1350
```

£28

LOWEST RATED SPEED I Control-lever position degrees: 32...40

Setting point w/out aux. spring Speed 1/min: 350 Contr.-rod trav.mm: 4.80

Testing:

1/min : 100 Speed

C-rod trav.mm min: 19.50 Speed 1/min: 350 C-rod trav.mm : 4.70...4.90 C-rod trav.mm : 2.00 Speed 1/min: 380...440

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Remarks:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Prestroke mm
                                                                          : 4.00...4.10
                                                                          : (3.95...4.15)
Note inst. in remarks column
                                                      Contr.-rod trav.mm: 9.00...12.00
Test sheet
                                                                          : 6- 3- 5- 2- 4- 1
                   : MB 11,0 D 1
                                                      Cam sequence
Edition
                    : 12.09.86
Superceeded
                    : 12.85
Calibrating oil
                  : ISO-4113
                                                      SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
                   : 0 401 876 739
Combination no.
Injection pump
                                                      SD mark cyl. no. : 6
Pump designation
                    : PE6P110A320LS3805-10
EP type number
                                                      BASIC SETTING
                    : 0 411 816 740
Governor
                    : RSV650...1150P1A820-
                                                                     1/mi: 1180
Governor design.
                                                      1st speed
                    : 0 421 833 177
                                                      Contr.-rod trav.mm: 12.50...12.60
Governer no.
                                                      Del.quantity cm3/ : 13.7...13.9
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                                     100H.: (13.4...14.1)
                    : 0M421
Engine
                                                                    cm3/:0.4
                                                      Dispersion
1st version kW : 159.0
Speed
              1/min: 2300
                                                                     100H.: (0.8)
TEST BENCH REQUIREMENTS
                                                                    1/min: 650.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/: 0.4
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                    100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
                                                      Control-lever position
Inlet press., bar : 1.50
                                                                   Degree: -3
1/min: 800
Over flow
                                                      Speed
                                                      Cont.-rod travelmm: 0.30...0.70
 quantity min. 1/h: 100...110
                                                      Governor-spring reload
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                      Notch setting x : ?
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar
                   : 172...175
                                                      1st version
                                                      Speed 1/min: 1180
Del.quantity cm3/: 137.0...139.0
1000H.: (134.5...141.5)
Dispersion cm3/: 4.00
Test inj. tubing
                   : 1 680 750 015
Outside diameter
                                                                   1000H.: (8.00)
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                      HIGHEST RATED SPEED
                                                      1st version
(A) Injection pump setting values
    Insp. values in parentheses
                                                      Control-lever
    Set constant delivery quant.
                                                       position degrees: 53...61
    per values
                                                      Testing:
START OF DELIVERY
                                                      1st c-rod trav.mm : 11.50
                                                                 1/min : 1210...1220
Test pressure, bar: 25...27
                                                        Speed
F02
```

```
2nd c-rod trav.mm: 4.00
            1/min : 1240...1260
  Speed
4th speed 1/min : 1350
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 26...34
Setting point w/out aux. spring
            1/min : 650
Contr.-rod trav.mm: 6.1
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 19.50
             1/min : 650
Speed
                 : 6.00...6.20
C-rod trav.mm
C-rod trav.mm
                   : 2.00
             1/min : 650...715
Speed
SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 2.00
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1180
  C-rod trav.mm : 12.40...12.50
2nd speed 1/min: 970
C-rod trav.mm : 12.90...13.10
3rd speed 1/min : 1100
C-rod trav.mm : 12.50...12.70
4th speed 1/min : 700
  C-rod trav.mm : 13.10...13.30
FUEL-DELIVERY CHARACTERISTICS
             1/min : 970
Speed
Del.quantity cm3/: 137.0...141.0
1000H.: (134.0...144.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      START OF DELIVERY
Note inst. in remarks column
                                                       Test pressure, bar: 25...27
                    : MB 11,0 Q 4
Test sheet
                                                                           : 4.00...4.10
                                                      Prestroke mm
                                                                           : (3.95...4.15)
Edition
                    : 12.09.86
                                                       Contr.-rod trav.mm: 9.00...12.00
Superceeded
                    : 3.85
                    : ISO-4113
                                                      Cam sequence
                                                                           : 6- 3- 5- 2- 4- 1
Calibrating oil
                    : 0 401 876 740
Combination no.
                                                      SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation
                    : PE6P120A320LS3815-10
EP type number
                    : 0 411 826 735
Governor
                                                      SD mark cyl. no. : 6
Governor design.
                    : RSV750...1150P1A820-
                                                      BASIC SETTING
                    : 0 421 833 179
Governer no.
                                                      1st speed 1/mi: 1180
Customer-spec. information
                                                      Contr.-rod trav.mm: 11.00...11.10
Gustomer
                    : DAIMLER-BENZ
Engine
                    : 0M421A
                                                      Del.quantity cm3/: 16.3...16.5
1st version kW : 184.0
                                                                     100H.: (16.0...16.8)
              1/min: 2300
Speed
                                                                     cm3/:0.5
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.9)
Calibrating-oil inlet temp. °C
                                                      2nd speed 1/min: 750.0
Contr.-rod trav. m: 3.3...3.5
Del.quantity cm3/: 1.8...2.4
100H.: (1.5...2.7)
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                                     cm3/:0.8
                                                      Dispersion
                                                                     100H.: (1.2)
Inlet press., bar : 1.50
                                                      SLEEVE POSITION
Over flow
                                                      Control-lever position
 quantity min. 1/h: 100...120
                                                                    Degree: -3
1/min: 800
Calibrating nozzle-holder
                                                      Speed
                   : 1 688 901 019
                                                      Cont.-rod travelmm: 0.30...0.70
 assembly
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar
                    : 207...210
                                                      1st version
                                                                     1/min: 1180
Perforated-plate
                                                      Speed
                                                      Del.quantity cm3/: 163.0...165.0
1000H.: (160.0...168.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
 diameter mm
                    : 0,8
Test inj. tubing
                   : 1 680 750 067
                                                      HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                      1st version
                    : 6.00x1.50x1000
                                                      Control-lever
x Length mm
                                                       position degrees: 56...64
(A) Injection pump setting values
                                                      Testing:
    Insp. values in parentheses
    Set constant delivery quant.
                                                      1st c-rod trav.mm : 10.00
    per values
                                                                    1/min : 1210...1220
                                                        Speed
F04
```

```
2nd c-rod trav.mm : 4.00
Speed 1/min: 1235...1255
4th speed 1/min: 1350
  C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 32...40
Setting point w/out aux. spring
            1/min : 750
Speed
Contr.-rod trav.mm: 3.4
Speed 1/min: 750
C-rod trav.mm : 3.30...3.50
             nm : 2.00
1/min : 755...815
C-rod trav.mm
Speed
SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 2.00
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1180
  C-rod trav.mm : 11.00...11.10
2nd speed 1/min : 975
  C-rod trav.mm : 11.60...11.80
3rd speed 1/min : 600
  C-rod trav.mm : 11.80...12.00
FUEL-DELIVERY CHARACTERISTICS
             1/min : 975
Speed
Del.quantity cm3/: 174.0...180.0
1000H.: (171.0...183.0)
Dispersion cm3/: 8.0
1000H.: (12.0)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 4.00...4.10
                                                    Prestroke mm
                                                                        : (3.95...4.15)
Note inst. in remarks column
                                                    Contr.-rod trav.mm: 9.00...12.00
                                                                       : 8- 7- 2- 6- 3- 5-
                                                    Cam sequence
Test sheet
                   : MB 14,6 T 1
                   : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Combination no.
                   : 0 401 878 706
                                                                         270-315
                                                    Tolerance + - 0
                                                                       : 0.50 (0.75)
Injection pump
Pump designation : PE8P110A320LS3813-10
                                                    SD mark cyl. no. : 8
EP type number
                  : 0 411 818 712
                                                    BASIC SETTING
Governor
Governor design. : RSV350...750P0A824-2
Governer no. : 0 421 833 228
                                                    1st speed
                                                                   1/mi: 700
Customer-spec. information
                                                    Contr.-rod trav.mm: 13.90...14.00
                  : DAIMLER-BENZ
Customer
                                                    Del.quantity cm3/: 14.2...14.4
Engine
                   : 0M422
                                                                  100H.: (13.9...14.6)
1st version kW : 173.0
Speed
             1/min: 1500
                                                                  cm3/:0.4
                                                    Dispersion
TEST BENCH REQUIREMENTS
                                                                  100H.: (0.8)
Calibrating-oil inlet temp. C
                                                                  1/min: 350.0
                                                    2nd speed
                                                    Contr.-rod trav. m: 7.7...7.9
                   : 38...42
                                                    Del.quantity cm3/: 1.4...1.8
100H.: (1.1...2.0)
Dispersion cm3/: 0.4
100H.: (0.7)
Overflow valve
                   : 1 417 413 025
Inlet press., bar: 1.50
                                                    SLEEVE POSITION
Over flow
                                                    Control-lever position
                                                                 Degree: -3
1/min: 800
 quantity min. 1/h: 100...120
                                                    Cont.-rod travelmm: 0.30...1.40
Calibrating nozzle-holder
                 : 0 681 343 009
 assembly
                                                    Governor-spring reload
Opening
                                                    Notch setting x :?
pressure, bar : 172...175
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 015
                                                    1st version
                                                    Speed
                                                                  1/min: 700
                                                    Del.quantity cm3/: 142.0...144.0
1000H.: (139.5...146.5)
Dispersion cm3/: 4.00
1000H.: (8.00)
Outside diameter
x Wall thickness
                  : 6.00x1.50x600
x Length mm
(A) Injection pump setting values
                                                    HIGHEST RATED SPEED
    Insp. values in parentheses
    Set constant delivery quant.
                                                    1st version
    per values
                                                    Control-lever
                                                     position degrees: 24...28
START OF DELIVERY
Test pressure, bar: 25...27
                                                    Testing:
                                                    1st c-rod trav.mm : 12.90
```

```
Speed 1/min: 750...755
2nd c-rod trav.mm : 4.00
Speed 1/min : 780...793
LOWEST RATED SPEED I
Control-lever
 position degrees: 12...20
Setting point w/out aux. spring
Speed 1/min: 350
Contr.-rod trav.mm: 7.1
Testing:
Speed 1/min: 100
C-rod trav.mm min: 19.50
Speed 1/min: 350
C-rod trav.mm: 7.00...7.20
SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 2.00
STARTING FUEL DELIVERY
               1/min : 100
Speed
Del.quantity cm3/: 140.0...160.0
1000H.: (136.0...164.0)
Remarks:
Observe VDT-I-420/120
0
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     START OF DELIVERY
                                                     Test pressure, bar: 25...27
Note inst. in remarks column
                                                                         : 4.00...4.10
                                                     Prestroke mm
                                                                         : (3.95...4.15)
Test sheet
                   : MB 14,6 P 3
                                                     Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 8-7-2-6-3-5-
Edition
                   : 12.09.86
Superceeded
                                                     Cam sequence
                   : ISO-4113
Calibrating oil
Combination no.
                   : 0 401 878 707
                                                     SD ang. spacing CS: 0-45-90-135-180-225-
Injection pump
Pump designation
                   : PE8P120A320LS3816-10
                                                                           270-315
                                                     Tolerance + - 0
EP type number
                                                                         : 0.50 (0.75)
                   : 0 411 828 715
Governor
Governor design.
                   : RSV350...0750P0A824-
                                                     SD mark cyl. no. : 8
                   : 0 421 833 229
                                                     BASIC SETTING
Governer no.
                                                                    1/mi: 700
Customer-spec. information
                                                     1st speed
Customer
                   : DAIMLER-BENZ
                                                     Contr.-rod trav.mm: 12.10...12.20
Engine
                   : 0M422A
                                                     Del.quantity cm3/: 18.4...18.6
                   : 227.0
1st version kW
                                                                   100H.: (18.1...18.9)
TEST BENCH REQUIREMENTS
                                                                   cm3/:0.5
                                                     Dispersion
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                   100H.: (0.9)
                                                                   1/min: 350.0
Overflow valve
                                                     2nd speed
                                                     Contr.-rod trav. m: 4.8...5.0
                   : 1 417 413 025
                                                     Del.quantity cm3/: 1.6...2.2
                                                                   100H.: (1.3...2.5)
cm3/: 0.8
100H.: (1.2)
Inlet press., bar : 1.50
                                                     Dispersion
Overflow
 quantity min. 1/h: 100...120
                                                     SLEEVE POSITION
Calibrating nozzle-holder
                                                     Control-lever position
                                                                  Degree: -3
                   : 1 688 901 019
 assembly
                                                                   17min: 800
                                                     Speed
                                                     Cont.-rod travelmm: 0.30...0.70
Opening
                   : 207...210
 pressure, bar
                                                     Governor-spring reload
                                                     Notch setting x : 2.50
Perforated-plate
diameter mm
                   : 0,8
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Test inj. tubing : 1 680 750 067
                                                     1st version
                                                                   1/min: 700
                                                     Speed
                                                     Del.quantity cm3/: 184.0...186.0
1000H.: (181.0...189.0)
Dispersion cm3/: 5.00
Outside diameter
x Wall thickness
                   : 6.00x1.50x1000
x Length mm
                                                                  1000H.: (9.00)
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     HIGHEST RATED SPEED
                                                     1st version
    per values
                                                     Control-lever
                                                      position degrees: 26...30
```

Testing:

1st c-rod trav.mm : 11.10 Speed 1/min : 750...755 2nd c-rod trav.mm : 4.00 Speed 1/min : 780...793

LOWEST RATED SPEED I

Control-lever

position degrees: 12...20 Setting point w/out aux. spring

1/min : 350 Speed Contr.-rod trav.mm: 4.9

Testing:

Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 350

: 4.80...5.00 C-rod trav.mm

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

STARTING FUEL DELIVERY

Speed 1/min : 100

Del.quantity cm3/: 170.0...190.0 1000H.: (166.0...194.0)

Remarks:

Observe VDT-I-420/120

0

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                   Test pressure, bar: 25...27
                                                                     : 4.00...4.10
Note inst. in remarks column
                                                   Prestroke mm
                                                                     : (3.95...4.15)
                                                   Contr.-rod trav.mm: 9.00...12.00
                   : MB 18,3 I 1
Test sheet
                                                   Cam sequence : 10- 9- 4- 1-
- 6- 3- 5-
                                                                                          7
                   : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 879 703
                                                   SD ang. spacing CS: 0-45-72-117-144-189-
                                                                       216-261-288-333
Injection pump
                                                   Tolerance + - 0
                                                                     : 0.50 (0.75)
                   : PE10P110A320LS3818~
Pump designation
                   : 0 411 819 706
                                                   SD mark cyl. no. : 10
EP type number
Governor
                  : RSV650...1150P0A823-
                                                   BASIC SETTING
Governor design.
Governer no.
                   : 0 421 833 244
                                                   1st speed 1/mi: 1180
                                                   Contr.-rod trav.mm: 10.90...11.00
Customer-spec. information
                  : DAIMLER-BENZ
Customer
                                                   Del.quantity cm3/: 11.3...11.5
                  : OM 423
Engine
                                                                100H.: (11.0...11.7)
1st version kW : 238.0
             1/min: 2300
                                                   Dispersion
                                                                cm3/:0.4
Speed
TEST BENCH REQUIREMENTS
                                                                100H.: (0.8)
                                                  2nd speed 1/min: 650.0
Contr.-rod trav. m: 5.7...5.9
Del.quantity cm3/: 1.2...2.0
Calibrating oil inlet temp. °C
                  : 38...42
                                                                100H.: (0.9...2.2)
Overflow valve
                                                                cm3/:0.4
                   : 1 417 413 025
                                                   Dispersion
                                                                100H.: (0.7)
Inlet press., bar : 1.50
                                                   SLEEVE POSITION
Overflow
                                                   Control-lever position
                                                               Degree: -3
1/min: 800
 quantity min. 1/h: 130...150
                                                   Speed
                                                   Cont.-rod travelmm: 0.30...1.00
Calibrating nozzle-holder
            : 0 681 343 009
 assembly
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                   1st version
                                                                1/min: 1180
                                                   Speed
                                                  Del.quantity cm3/: 113.0...115.0
                                                               1000H.: (110.5...117.5)
Test inj. tubing : 1 680 750 015
                                                               cm3/ : 4.00
                                                   Dispersion
                                                               1000H.: (8.00)
Outside diameter
x Wall thickness
                                                  HIGHEST RATED SPEED
                 : 6.00x1.50x600
x Length mm
                                                   1st version
(A) Injection pump setting values
                                                  Control-lever
                                                   position degrees: 36...44
    Insp. values in parentheses
    Set constant delivery quant.
    per values ____
                                                   Testing:
                                                   1st c-rod trav.mm : 10.00
                                                     Speed 1/min: 1210...1220
START OF DELIVERY
F10
```

2nd c-rod trav.mm: 4.00 1/min : 1105...1135 Speed 1/min : 1300 4th speed C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 21...29 Setting point w/out aux. spring 1/min : 650 Contr.-rod trav.mm: 5.7 Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 1/min : 650 Speed : 5.60...5.80 C-rod trav.mm SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1180 C-rod trav.mm : 10.80...11.00 2nd speed 1/min: 1050 C-rod trav.mm : 11.70...11.90 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 950
Del.quantity cm3/: 127.0...131.0
1000H.: (124.0...134.0) cm3/:6.00Dispersion 1000H.: (9.00) STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 130.0...150.0 1000H.: (126.0...154.0) Remarks: **APPLICATION** Combine-harvester When adjusting and checking, adjust speed regulation to 1210...1220 l/min. Afterwards, readjust speed regulation to 1160...1170 l/min.

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : STE 9,7 C SD mark cyl. no. : 1 Edition : 10.86 BASIC SETTING Superceeded Calibrating oil : ISO-4113 1st speed 1/mi: 1200 Combination no. : 0 401 886 700 Contr.-rod trav.mm: 12.70...12.80 Injection pump Pump designation : PE6P110A721RS3102 Del.quantity cm3/: 15.4...15.7 Governor : RSV250...1200P1A516 Governor design. 100H.: (-) Customer-spec. information Dispersion cm3/:0.4Customer : STEYR 100H.: (0.75) : WD 615.84 Engine 2nd speed 1/min: 250 Contr.-rod trav. m: 7.00...7.20 Del.quantity cm3/: 1.7...2.2 100H.: (-) 1st version kW : 191.0 1/min: 2400 Speed cm3/: 0.45 100H.: 0.75) TEST BENCH REQUIREMENTS Dispersion Calibrating-oil inlet temp. OC : 38...42 SLEEVE POSITION Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 025 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar : -Governor-spring reload Calibrating nozzle-holder Notch setting x : ? : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version Speed 1/min: 1200 Charge press, hPa: 700 Del.quantity cm3/: 154.0...157.0 1000H:: (151.5...159.5) Test inj. tubing : 1 680 750 015 cm3/ : 4.0Outside diameter Dispersion x Wall thickness 1000H.: (7.5) : 6,00x2,00x600 x Length mm HIGHEST RATED SPEED 1st version (A) Injection pump setting values Insp. values in parentheses Control-lever Set constant delivery quant. position degrees: 62...70 per values \_\_\_\_ Testing: 1st c-rod trav.mm : 11.70 START OF DELIVERY Speed 1/min: 1240...1250
2nd crod trav.mm: 4.00
Speed 1/min: 1310...1340
3rd crod trav.mm: 0.30...1.40 : 2.80...2.90 Prestroke mm : (2.75...2.95) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 1/min : 1430 Speed LOWEST RATED SPEED I

```
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
            1/min : 250
Speed
Contr.-rod trav.mm: 6.60
            1/min : 250
mm : 7.00...7.20
Speed
C-rod trav.mm
C-rod trav.mm
                  : 2.00
            1/min: 490...550
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
hPa : 700
Speed
Pressure
Contr.-rod trav.mm: 12.70...12.80
Measurement
            1/min : 500
Speed
1st pressure hPa : -
                   : 10.20...10.30
  C-rod trav.mm
2nd pressure hPa : 470
                   : 12.10...12.20
  C-rod trav.mm
3rd pressure hPa : 300
  C-rod trav.mm
                   : 10.60...10.80
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
             1/min : 700
Speed
Del.quantity cm3/: 150.0...154.0
             1000H.: (147.0...157.0)
             cm3/ : -
Dispersion
             1000H.: (-)
Charge press. hPa : -
             1/min : 700
Speed
Del.quantity cm3/: 102.0...105.0
1000H.: (99.5...107.5)
             cm3/:-
Dispersion
             1000H.: (-)
STARTING FUEL DELIVERY
            1/min : 100
Speed
Del.quantity cm3/: 190.0...220.0
             1000H.: (-)
Remarks:
```

F13

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                                                       SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
                    : VAL 7,2 A
: 09.03.87
Edition
Superceeded
Calibrating oil
                    : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no.
                    : 0 402 076 056
                                                       BASIC SETTING
Injection pump
                                                                       1/mi: 700
                                                        1st speed
Pump designation : PES6P110A320RS505
EP type number
                                                       Contr.-rod trav.mm: 12.00...12.10
                    : 0 412 016 072
Governor
Governor design. : RSV325...1150P0A522
                                                       Del.quantity cm3/: 13.8...14.1
Governer no.
                   : 0 421 833 242
                                                                      100H.: (13.5...14.3)
Customer-spec. information
Customer
                                                                      cm3/:0.4
                    : VALMET
                                                       Dispersion
Engine
                    : 612 DSJ
                                                                      100H.: (0.7)
                                                       2nd speed 1/min: 325.0
Contr.-rod trav. m: 7.1...7.3
Del.quantity cm3/: 1.2...1.6
1st version kW : 165.0
              1/min: 2300
Speed
                                                                      100H.: (0.9...1.8)
cm3/: 0.3
100H.: (0.6)
TEST BENCH REQUIREMENTS
                                                       Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                       SLEEVE POSITION
                                                       Control-lever position
Overflow valve
                    : 1 417 413 025
                                                                     Degree: -3
                                                                      17min: 800
                                                       Speed
Inlet press., bar : 1.50
                                                       Cont.-rod travelmm: 0.30...0.70
                                                       Governor-spring reload
Calibrating nozzle-holder
 assembly
                   : 0 681 343 009
                                                       Notch setting x : 4.00
Opening
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
pressure, bar
                    : 172...175
                                                       1st version
                                                       Speed 1/min: 700
Charge press. hPa: 700
Del.quantity cm3/: 138.0...141.0
1000H.: (135.5...143.5)
Dispersion cm3/: 4.00
                    : 1 680 750 015
Test inj. tubing
Outside diameter
x Wall thickness
                    : 6.00x1.50x600
                                                                     1000H.: (7.50)
x Length mm
                                                       HIGHEST RATED SPEED
(A) Injection pump setting values
    Insp. values in parentheses
                                                       1st version
    Set constant delivery quant.
                                                       Control-lever
                                                        position degrees: 36...44
    per values
                                                       Testing:
START OF DELIVERY
                                                       1st c-rod trav.mm : 11.00
Test pressure, bar: 25...27
                                                                  1/min : 1190...1200
                                                          Speed
                                                       2nd c-rod trav.mm : 4.00
Speed 1/min : 1290...1310
Prestroke mm
                    : 3.00...3.10
                    : (2.95...3.15)
                                                                     1/min : 1460
Contr.-rod trav.mm: 9.00...12.00
                                                       4th speed
F14
```

C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Setting point w/out aux. spring 1/min : 325 Contr.-rod trav.mm: 6.7 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.60 1/min : 325 Speed : 7.10...7.30 : 2.00 C-rod trav.mm C-rod trav.mm 1/min : 460...520 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 700 1st speed C-rod trav.mm : 12.00...12.10 2nd speed 1/min: 1150 C-rod trav.mm : 11.90...12.10 compensator (LDA, ADA, ALDA) 1st version Setting Speed 1/min : 500 hPa : 700 Pressure Contr.-rod trav.mm: 12.00...12.10 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.40...10.50 2nd pressure hPa : 400 C-rod trav.mm : 11.50...11.60 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 102.0...105.0 1000H.: (99.5...107.5) STARTING FUEL DELIVERY 1/min : 100 Del.quantity cm3/: 200.0...220.0 1000H.: (196.0...224.0) LOW IDLE 1/min : 325 Speed Contr.-rod trav.mm: 7.10...7.30

Del.quantity cm3/: 12.0...16.0 1000H.: (9.5...18.5) Dispersion cm3/: 3.00

Dispersion cm3/: 3.00 1000H.: (6.00)

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm
On activation of the starting solenoid,

the start position must be reached.

APPLICATION
Tractor (tractor engines)

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

```
: 4.40...4.50
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Prestroke mm
                                                                        : (4.35...4.55)
Note inst. in remarks column
                                                    Contr.-rod trav.mm: 9.00...12.00
                                                                       : 1-5- 3- 6- 2- 4
                                                    Cam sequence
Test sheet
                   : SCA 11.0 V
: 09.03.87
Edition
Superceeded
                   : 9.84
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                 : ISO-4113
Calibrating oil
Combination no.
                   : 0 402 646 803
                                                    SD mark cyl. no. : 1
Injection pump
Pump designation : PE6P12OA72ORS7004
                                                    BASIC SETTING
EP type number
                  : 0 412 626 801
                                                                   1/mi: 700
Governor
                                                    1st speed
Governor design. : RQ750PA528
Governer no.
                  : 0 421 801 126
                                                    Contr.-rod trav.mm: 12.80...12.90
Customer-spec. information
                                                    Del.quantity cm3/: 20.9...21.1
Customer
                   : SAAB-SCANIA
                                                                  100H.: (20.6...21.4)
TEST BENCH REQUIREMENTS
                                                    Dispersion
                                                                  cm3/:0.6
Calibrating-oil inlet temp. C
                   : 38...42
                                                                  100H.: (0.9)
Overflow valve
                                                    SLEEVE POSITION
                   : 1 417 413 025
                                                    Control-lever position
                                                                 Degree: -1
1/min: 600
Inlet press., bar : 1.50
                                                    Speed
                                                    Cont.-rod travelmm: 15.20...17.80
Calibrating nozzle-holder
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
                  : 1 688 901 019
Opening
                                                    1st version
                                                    Speed 1/min: 700
Del.quantity cm3/: 209.0...211.0
1000H.: (206.0...214.0)
                   : 207...210
 pressure, bar
Perforated-plate
                   : 0,8
                                                                 cm3/ : 6.00
 diameter mm
                                                    Dispersion
                                                                 1000H.: (9.00)
                                                    HIGHEST RATED SPEED
Test inj. tubing
                  : 1 680 750 015
                                                    1st version
                                                    Control-lever
Outside diameter
x Wall thickness
                                                     position degrees: 21...29
                  : 6.00x1.50x600
x Length mm
                                                    Testing:
                                                    1st c-rod trav.mm : 11.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Speed 1/min: 750...755
                                                    2nd c-rod trav.mm : 4.00
                                                                1/min : 784...797
1/min : 850
    per values
                                                      Speed
                                                    4th speed
                                                      C-rod trav.mm : 0.30...1.00
START OF DELIVERY
Test pressure, bar: 25...27
Date of mfg.
                : 141
                                                    STARTING FUEL DELIVERY
                   : 5.00...5.10
Prestroke mm
                   : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
                                                    Speed
                                                                 1/min : 100
Date of mfg. : < 052
F-16
```

Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 HIGH IDLE Contr.-rod trav.mm: 4.90...5.10 Dispersion cm3/: 4.00 1000H.: (7.00) Remarks: : DS11 43, 44, 45 ADDITIONAL INFORMATION 11 42, 45 Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm. Check and set without ROBO diaphragam Scania test specifications taken over on Aug. 8, 1983 For comb. with letter index see VDT-1-400/116. for sealing see VDT-I-400/117. Start of delivery - engine: DS 11 - 17° before TDC DSI 11 - 16° before TDC Firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                       : 4.40...4.50
                                                   Prestroke mm
                                                                       : (4.35...4.55)
Note inst. in remarks column
                                                   Contr.-rod tray.mm: 9.00...12.00
                                                                      : 1-5- 3- 6- 2- 4
                                                   Cam sequence
Test sheet
                   : SCA 11,0 V2
                   : 09.03.87
Edition
Superceeded
                   : 9.84
                                                   SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Calibrating oil
                   : ISO-4113
                   : 0 402 646 804
Combination no.
                                                   SD mark cyl. no. : 1
Injection pump
                  : PE6P120A720RS7004
Pump designation
                                                   BASIC SETTING
EP type number
                   : 0 412 626 801
                                                                  1/mi: 850
Governor
                                                    1st speed
Governor design.
                   : RQ900PA528
Governer no.
                   : 0 421 801 127
                                                   Contr.-rod trav.mm: 12.80...12.90
                                                   Del.quantity cm3/: 20.7...20.9
Customer-spec. information
Customer
                   : SAAB-SCANIA
                                                                 100H.: (20.4...21.2)
TEST BENCH REQUIREMENTS
                                                   Dispersion
                                                                 cm3/:0.6
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                 100H.: (0.9)
Overflow valve
                                                   SLEEVE POSITION
                   : 1 417 413 025
                                                   Control-lever position
                                                                Degree: -1
1/min: 600
                                                   Speed
Inlet press., bar: 1.50
                                                   Cont.-rod travelmm: 15.20...17.80
Calibrating nozzle-holder
               : 1 688 901 019
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
                                                   1st version
Opening
                   : 207...210
 pressure, bar
                                                   Speed
                                                                 1/min: 850
                                                   Del.quantity cm3/: 207.0...209.0
1000H.: (204.0...212.0)
Perforated-plate
                   : 0,8
 diameter mm
                                                   Dispersion
                                                                cm3/ : 6.00
                                                                1000H.: (9.00)
Test inj. tubing : 1 680 750 015
                                                   HIGHEST RATED SPEED
                                                   1st version
                                                   Control-lever
Outside diameter
x Wall thickness
                                                    position degrees: 22...30
                   : 6.00x1.50x600
x Length mm
                                                   Testing:
                                                   1st c-rod trav.mm : 11.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     Speed 1/min: 900...905
                                                   2nd c-rod trav.mm : 4.00
                                                               1/min: 941...955
    per values
                                                     Speed
                                                    4th speed
                                                                1/min : 1000
START OF DELIVERY
                                                     C-rod trav.mm : 0.00...1.00
Test pressure, bar: 25...27
Date of mfg.
                : 141
                                                   STARTING FUEL DELIVERY
                   : 5.00...5.10
Prestroke mm
                   : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
                                                   Speed
                                                                1/min : 100
Date of mfg.
             : < 052
F18
```

Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 HIGH IDLE Contr.-rod trav.mm: 4.90...5.10 cm3/: 4.00Dispersion 1000H.: (7.00) Remarks: : DS11 43, 44, 45 Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm ADDITIONAL INFORMATION Check and set without ROBO diaphragam For comb. with letter index see VDT-I-400/116. For sealing see VDT-I-400/117. Scania test specifications taken over on Aug. 18, 1983 Engine model DS 11 - 170 before top dead center. Engine model DSI 11 - 16° before top dead center. firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : SCA 11,0 V1
Edition
                    : 09.03.87
Superceeded
                    : 9.84
Calibrating oil
                 : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no.
                    : 0 402 646 805
                                                      BASIC SETTING
Injection pump
                                                      1st speed
                                                                     1/mi: 1000
Pump designation : PE6P120A720R$7004
EP type number
                    : 0 412 626 801
                                                      Contr.-rod trav.mm: 12.80...12.90
Governor
                                                     Del.quantity cm3/: 21.4...21.6
Governor design. : RQ1050PA528
Governer no.
                    : 0 421 801 128
                                                                    100H.: (21.1...21.9)
Customer-spec. information
Customer
                   : SAAB-SCANIA
                                                     Dispersion
                                                                    cm3/:0.6
Engine
                    : DS11 43_DSI11 45
                                                                    100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating-oil inlet temp. OC
                                                      1st version
                    : 38...42
                                                                    1/min: 1000
                                                      Speed
                                                     Del.quantity cm3/: 214.0...216.0
1000H.: (211.0...219.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Overflow valve
                    : 1 417 413 025
Inlet press., bar : 1.50
                                                     HIGHEST RATED SPEED
Calibrating nozzle-holder
 assembly
                : 1 688 901 019
                                                      Testing:
                                                      1st c-rod trav.mm : 11.80
                                                                  1/min : 1050...1055
Opening
                                                        Speed
                                                     2nd c-rod trav.mm : 4.00
 pressure, bar
                    : 207...210
                                                                  1/min: 1085...1095
                                                        Speed
Perforated-plate
                                                      4th speed
                                                                   1/min : 1150
 diameter mm
                                                        C-rod trav.mm
                    : 0,8
                                                                         : 0.00...1.00
Test inj. tubing : 1 680 750 015
                                                      STARTING FUEL DELIVERY
Outside diameter
× Wall thickness
                                                                   1/min : 100
                                                      Speed
                 : 6.00x1.50x600
                                                     Del.quantity cm3/: 240.0...290.0
x Length mm
                                                                   1000H.: (-)
                                                      Contr.-rod tray.mm: 20.00...21.00
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     HIGH IDLE
                                                     Contr.-rod trav.mm: 4.90...5.10
Dispersion cm3/: 4.00
1000H.: (7.00)
    per values
START OF DELIVERY
Test pressure, bar: 25...27
                                                     Remarks:
                                                     ADDITIONAL INFORMATION
Prestroke mm
                    : 5.00...5.10
                    : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
```

F20

Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragam

Scania test specifications taken over on Aug. 18, 1983 For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Start of delivery - engine: DS 11 - 17° before TDC DSI 11 - 16° before TDC firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                           : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : SCA 11,0U13
Edition
                    : 09.03.87
Superceeded
                   : ISO-4113
Calibrating oil
                                                      SD mark cyl. no. : 1
Combination no.
                    : 0 402 646 817
                                                      BASIC SETTING
                                                                      1/mi: 700
Injection pump
                                                      1st speed
Pump designation : PE6P120A720RS7001
                                                      Contr.-rod trav.mm: 13.20...13.30
EP type number
                   : D 412 626 800
Governor
                                                      Del.quantity cm3/: 19.9...20.1
Governor design. : RQV275...1000PA539-4
Governer no.
                    : 0 421 813 432
                                                                     100H.: (19.6...20.4)
Customer-spec. information
                                                      Dispersion
                                                                     cm3/:0.6
Customer
                    : SCANIA
Engine
                    : DS11 15
                                                                     100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                                     1/min: 275.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 4.4...4.6
Calibrating-oil inlet temp. C
                    : 38 ... 42
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 275
                                                         Sleeve travel mm: 0.90...1.00
Inlet press., bar : 1.50
                                                      2nd speed 1/min: 350
                                                         Sleeve travel mm: 1.80...2.70
Calibrating nozzle-holder
                : 1 688 901 019
                                                      3rd speed 1/min: 430
 assembly
                                                      Sleeve travel mm: 3.40...4.40
4th speed 1/min: 500
Sleeve travel mm: 4.80...5.00
Opening
 pressure, bar
                    : 207...210
                                                      5th speed 1/min: 1040
                                                        Sleeve travel mm: 8.00...8.10
Perforated-plate
                    : 0,8
 diameter mm
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                      Degree: -1
Speed 1/min: 1090
Cont.-rod travelmm: 15.20...17.80
                   : 1 680 750 015
Test inj. tubing
Outside diameter
x Wall thickness
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 6.00x1.50x600
x Length mm
                                                      1st version
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Speed
                                                                     1/min: 700
                                                      Charge press. hPa: 900
Del.quantity cm3/: 199.0...201.0
1000H:: (196.0...204.0)
Dispersion cm3/: 6.00
    per values
START OF DELIVERY
                                                                    1000H.: (9.00)
Test pressure, bar: 25...27
                                                      HIGHEST RATED SPEED
Prestroke mm
                    : 5.00...5.10
                    : (4.95...5.15)
                                                      1st version
Contr.-rod trav.mm: 9.00...12.00
```

F22

Control-lever Del.quantity cm3/: 240.0...290.0 1000H.: (-) position degrees: 58...66 Contr.-rod trav.mm: 20.00...21.00 Testing: 1st c-rod trav.mm : 12.20 LOW IDLE Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 1/min : 275 Speed 1/min: 1190...1220 Contr.-rod trav.mm: 4.40...4.60 Speed 4th speed 1/min: 1300 cm3/:3.00Dispersion C-rod trav.mm : 0.00...1.00 1000H.: (6.00) Because of flattening, set the spring preload on new delivery-valve holders LOWEST RATED SPEED I Control-lever to 2.9...3.1 mm. position degrees: 4...12 Testing: 1/min : 100 Speed C-rod trav.mm min : 5.90 ADDITIONAL INFORMATION Speed 1/min : 275 C-rod trav.mm : 4.40...4.60 C-rod trav.mm : 2.00 1/min : 320...380 Speed Delivery-valve spring pre-tension 3.2...3.4 mm. compensator (LDA,ADA,ALDA) Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring 1st version preload on new delivery-valve holders Setting to 3.0...3.1 mm. 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.20...13.30 Measurement Check and set without ROBO diaphragam 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 11.60...11.70 2nd pressure hPa : 420 Scania test specifications taken over on Aug. 18, 1983 For comb. With letter index see : 12.80...12.90 C-rod trav.mm 3rd pressure hPa : 290 VDT-I-400/116. : 11.90...12.10 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 900 For sealing see VDT-I-400/117. 1/min : 1000 Speed Del.quantity cm3/: 193.0...201.0 1000H.: (191.0...203.0) Charge press. hPa : -Start of delivery - engine: 170 before 1/min : 500 Speed Del.quantity cm3/: 160.0...164.0 1000H.: (158.0...166.0) Firing sequence of engine: 1-5-3-6-2-4. STARTING FUEL DELIVERY Speed 1/min : 100

F23

: 1-5-3-6-2-4 BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence Note inst. in remarks column SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Test sheet : SCA 11\_0U11 Edition : 09.03.87 Superceeded : 10.85 Calibrating oil : ISO-4113 SD mark cyl. no. : 1 : 0 402 646 819 Combination no. BASIC SETTING Injection pump 1st speed 1/mi: 700 Pump designation : PE6P120A720RS7001 EP type number : 0 412 626 800 Contr.-rod trav.mm: 11.70...11.80 Governor Del.quantity cm3/ : 16.1...16.3 Governor design. : RQ200/1100PA713 Governer no. : 0 421 801 262 100H.: (15.8...16.6) Customer-spec. information Customer : SCANIA cm3/:0.5Dispersion Engine : DS11 25.26 100H.: (0.8) TEST BENCH REQUIREMENTS 2nd speed 1/min: 225.0 Contr.-rod trav. m: 4.9...5.1 Calibrating-oil inlet temp. °C Del.quantity cm3/: 1.3...1.7 : 38...42 100H.: (-) cm3/:0.3Dispersion Overflow valve 100H.: (0.6) : 1 417 413 025 SLEEVE POSITION Inlet press., bar: 1.50 Control-lever position Degree: -1 1/min: 600 Calibrating nozzle-holder Speed Cont.-rod travelmm: 15.20...17.80 : 1 688 901 019 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening : 207...210 pressure, bar 1st version 1/min: 700 Perforated-plate Speed Charge press. hPa: 900
Del.quantity cm3/: 161.0...163.0
1000H.: (158.0...166.0) : 0,8 diameter mm : 1 680 750 015 cm3/ : 5.00Test ini. tubing Dispersion 1000H.: (8.00) Outside diameter x Wall thickness HIGHEST RATED SPEED x Length mm : 6.00x1.50x600 Setting point: 1/min : 600 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Contr.-rod trav.mm: 16.0 per values \_\_\_\_ Testing: 1st c-rod trav.mm : 10.70 1/min : 1145...1160 START OF DELIVERY Speed Test pressure, bar: 25...27 2nd c-rod trav.mm : 4.00 1/min : 1290...1320 Speed 4th speed 1/min : 1400 : 5.00...5.10 Prestroke mm : (4.95...5.15) C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 9.00...12.00 F24

LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 225 Contr.-rod trav.mm: 4.5 Testing: 1/min : 100 Speed C-rod trav.mm min: 5.90 Speed 1/min: 225 : 4.40...4.60 C-rod trav.mm C-rod trav.mm : 2.00 1/min: 300...340 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 900 Speed Pressure Contr.-rod trav.mm: 11.70...11.80 Measurement 1/min : 500 Speed 1st pressure hPa C-rod trav.mm : 10.40...10.50 2nd pressure hPa : 220 C-rod trav.mm : 11.40...11.50 3rd pressure hPa : 165 : 10.50...10.70 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 1100 Speed Del.quantity cm3/: 163.0...171.0 1000H.: (161.0...173.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 120.0...124.0 1900H.: (118.0...126.0) STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 LOW IDLE 1/min : 225 Speed Contr.-rod trav.mm: 4,40...4.60 Because of flattening, set the spring F25

preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Delivery-valve spring pre-tension 3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over on May 17, 1984 Start of delivery - engine: DS11 25 - 15° before TDC DS11 26 - 11° before TDC

Firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                     Cam sequence
Note inst. in remarks column
Test sheet
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : SCA 11,0U12
                    : 12.09.86
Superceeded
                  : 8.85
Calibrating oil : ISO-4113
                                                     SD mark cyl. no. : 1
Combination no.
                   : 0 402 646 819 W
                                                     BASIC SETTING
Injection rump
                                                     1st speed
                                                                    1/mi: 700
Pump designation : PE6P120A720RS7001W
EP type number
                    : 0 412 626 800
                                                     Contr.-rad trav.mm: 12.60...12.70
Governor
Governor design. : RQ200/1100PA713
                                                     Del.quantity cm3/: 18.0...18.2
Governer no.
                    : 0 421 801 262
                                                                   100H.: (17.7...18.5)
Customer-spec. information
                                                                   cm3/:0.6
Customer
                   : SCANIA
                                                     Dispersion
Engine
                    : DS11 28
                                                                   100H.: (0.9)
                                                                   1/min: 225.0
TEST BENCH REQUIREMENTS
                                                     2nd speed
                                                     Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/: 1.1...1.5
100H.: (-)
Calibrating-oil inlet temp. °C
inlet temp.
                    : 38...42
                                                                   cm3/:0.3
                                                     Dispersion
                                                                   100H.: (0.6)
Overflow valve
                    : 1 417 413 025
                                                     SLEEVE POSITION
Inlet press., bar : 1.50
                                                     Control-lever position
                                                                  Degree: 45...47
1/min: 600
                                                     Speed
Calibrating nozzle-holder
               : 1 688 901 019
                                                     Cont.-rod travelmm: 15.20...17.80
 assembly
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar
                   : 207...210
                                                     1st version
Perforated-plate
                                                     Speed
                                                                   1/min: 700
                                                     Charge press. hPa : 500
Del.quantity cm3/ : 180.0...182.0
1000H.: (177.0...185.0)
 diameter mm
                    : 0,8
                                                                  cm3/ : 6.00
Test inj. tubing
                  : 1 680 750 015
                                                     Dispersion
                                                                  1000H.: (9.00)
Outside diameter
                                                     HIGHEST RATED SPEED
x Wall thickness
x Length mm
                    : 6.00x1.50x600
                                                     Setting point:
                                                                 1/min : 600
(A) Injection pump setting values
                                                     Speed
    Insp. values in parentheses
Set constant delivery quant.
                                                     Contr.-rod trav.mm: 16.5
    per values
                                                     Testing:
                                                     1st c-rod trav.mm : 11.60
START OF DELIVERY
                                                                1/min : 1145...1160
                                                       Speed
                                                     2nd c-rod trav.mm : 4.00
Test pressure, bar: 25...27
                                                       Speed
                                                                 1/min : 1270...1300
                                                     4th speed 1/min : 1400
Prestroke mm
                    : 5.00...5.10
                                                       C-rod trav.mm : 0.00...1.00
                    : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
F25
```

LOWEST RATED SPEED I Setting point w/out aux. spring 1/min : 225 Contr.-rod trav.mm: 4.5 Testing: 1/min : 100 Speed C-rod trav.mm min: 5.90 1/min : 225 Speed : 4.40...4.60 C-rod trav.mm : 2.00 C-rod trav.mm 1/min: 300...340 Speed compensator (LDA, ADA, ALDA)  $_{i}m_{i}m_{i}m_{i}$ 1st version Setting 1/min : 500 Speed hPa : 500 Pressure Contr.-rod trav.mm: 12.60...12.70 Measurement 1/min : 500 Speed 1st pressure hPa C-rod trav.mm : 10.30...10.40 2nd pressure hPa : 220 C-rod trav.mm : 11.40...11.50 3rd pressure hPa : 165 C-rod trav.mm : 10.50...10.70 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 500 1/min : 1100 Del.quantity cm3/: 178.0...186.0 1000H.: (176.0...188.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 120.0...124.0 1000H.: (118.0...126.0) STARTING FUEL DELIVERY 1-5-3-6-2-4. Speed 1/min : 100 Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 LOW IDLE 1/min : 225 Speed Contr.-rod trav.mm: 4.40...4.60 Del.quantity cm3/: 11.0...15.0 1000H.: (-)

cm3/:3.00Dispersion 1000H.: (6.00) Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm. ADDITIONAL INFORMATION Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm. Check and set without ROBO diaphragam For comb. with letter index see VDT-I-400/116. For sealing see VDT-I-400/117. Scania test specifications taken over on Aug. 30, 1984 Start of delivery - engine: 110 before Firing sequence of engine:

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : SCA 11,1 A
                   : 09.03.87
Superceeded
                   : 2.86
Calibrating oil
                  : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 402 646 828
                                                      BASIC SETTING
Combination no.
Injection pump
                                                                      1/mi: 700
                                                      1st speed
Pump designation : PE6P120A720RS7015
                    : 0 412 626 810
                                                      Contr.-rod trav.mm: 14.30...14.40
EP type number
Governor
Governor design.
                    : RQV200...1000PA768
                                                      Del.quantity cm3/: 21.8...22.0
Governer no.
                    : 0 421 813 504
                                                                     100H.: (21.5...22.3)
Customer-spec. information
Customer
                   : SCANIA
                                                      Dispersion
                                                                    cm3/:0.6
                                                                     100H.: (0.9)
Engine
                    : DSC11 03
                                                      2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.8...5.0
TEST BENCH REQUIREMENTS
                                                      Del.quantity cm3/: 1.5...1.9
Calibrating-oil inlet temp. <sup>0</sup>C
                    : 38...42
                                                                    cm3/:0.3
                                                      Dispersion
                                                                     100H.: (0.6)
Overflow valve
                    : 1 417 413 025
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
Inlet press., bar: 1.50
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 225
Calibrating nozzle-holder
                 : 1 688 901 019
                                                        Sleeve travel mm: 1.30...1.50
 assembly
                                                      2nd speed 1/min: 270
                                                      Sleeve travel mm: 1.90...2.10 3rd speed 1/min: 360
Opening
 pressure, bar
                   : 207...210
                                                      Sleeve travel mm: 2.60...3.00
4th speed 1/min: 1040
Sleeve travel mm: 8.40...8.60
Perforated-plate
 diameter mm
                    : 0,8
                                                      5th speed 1/min: 1160
                                                        Sleeve travel mm: 10.10...10.30
Test inj. tubing
                  : 1 680 750 015
                                                      SLEEVE POSITION
Outside diameter
                                                      Control-lever position
x Wall thickness
                                                                   Degree: -1
                                                                     17min: 1040
                   : 6.00x1.50x600
x Length mm
                                                      Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
                                                      Speed
                                                                    1/min: 700
                                                      Charge press. hPa: 900
START OF DELIVERY
                                                      Del.quantity cm3/: 218.0...220.0
1000H: (215.0...223.0)
Dispersion cm3/: 6.00
Test pressure, bar: 25...27
Prestroke mm
                    : 5.00...5.10
                                                                   1000H.: (9.00)
                    : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
F28
```

HIGHEST RATED SPEED 1/min : 100 Speed De!.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 1st version Control-lever position degrees: 58...66 Testing: Remarks: 1st c-rod trav.mm : 13.30 Because of flattening, set the spring Speed 1/min: 1040...1050 preload on new delivery-valve holders 2nd c-rod trav.mm: 4.00 to 2.9...3.1 mm. 1/min: 1150...1180 Speed 4th speed 1/min: 1300 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I ADDITIONAL INFORMATION Control-lever position degrees: 6...14 Testing: 1/min : 100 Delivery-valve spring pre-tension Speed C-rod trav.mm min : 6.30 3.2...3.4 mm. Speed 1/min : 225 Permissible alteration of 3.0...3.5 mm C-rod trav.mm : 4.80...5.00 C-rod trav.mm : 2.00 Speed 1/min : 330...390 Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm. compensator (LDA\_ADA\_ALDA) 1st version Check and set without ROBO diaphragam Setting 1/min : 500 hPa : 900 Speed Pressure Contr.-rod trav.mm: 14.30...14.40 For comb. with letter index see VDT-I-400/116. Measurement 1/min : 500 Speed 1st pressure hPa : -: 12.50...12.60 C-rod trav.mm 2nd pressure hPa : 430 For sealing see VDT-I-400/117. C-rod trav.mm : 13.70...13.80 3rd pressure hPa : 280 : 12.70...12.90 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS Scania test specifications taken over on May 3, 1985 Start of delivery - engine: 17° before 1st version Charge press. hPa : 900 1/min : 1000 Firing sequence of engine: Speed Del.quantity cm3/ : 208.0...216.0 1-5-3-6-2-4. 1000H.: (206.0...218.0) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 175.0...179.0 1000H.: (173.0...181.0) STARTING FUEL DELIVERY

```
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                      SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - 0.50 (0.75)
Test sheet
                    : SCA 11,1 A1
Edition
                    : 13.11.86
Superceeded
                   : ISO-4113
Calibrating oil
                                                      SD mark cyl. no. : 1
Combination no.
                    : 0 402 646 828 Z
                                                      BASIC SETTING
Injection pump
                                                                     1/mi: 700
                                                      1st speed
Pump designation : PE6P120A720RS7015Z
                                                      Contr.-rcd trav.mm: 13.10...13.20
EP type number
                    : 0 412 626 810
Governor
Governor design. : RQV200...1000PA768
Governer no. : 0 421 813 504
                                                      Del.quantity cm3/: 18.9...19.1
                                                                     100H.: (18.6...19.4)
Customer-spec. information
Customer
                   : SCANIA
                                                      Dispersion
                                                                    cm3/:0.6
Engine
                    : DSC11 06
                                                                     100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                      2nd speed
                                                                    1/min: 225.0
                                                      Contr.-rod trav. m: 4.8...5.0
Calibrating-oil inlet temp. °C
                                                      Del.quantity cm3/: 1.5...1.9
inlet temp.
                    : 38...42
                                                                    100H.: (-)
                                                                    cm3/:0.3
                                                      Dispersion
                                                                     100H.: (0.6)
Overflow valve
                    : 1 417 413 025
                                                      (B) Setting of injection pump with
Inlet press., bar : 1.50
                                                          externally-mounted governor
                                                      SLEEVE TRAVELS
Calibrating nozzle-holder
                 : 1 688 901 019
                                                      1st speed 1/min: 225
 assembly
                                                        Sleeve travel mm: 1.30...1.50
                                                      2nd speed 1/min: 270
Opening
                    : 207...210
                                                        Sleeve travel mm: 1.90...2.10
 pressure, bar
                                                      3rd speed 1/min: 360
                                                      Sleeve travel mm: 2.60...3.00
4th speed 1/min: 1040
Sleeve travel mm: 8.40...8.60
Perforated-plate
 diameter mm
                    : 0,8
                                                      5th speed 1/min: 1160
                   : 1 680 750 015
                                                        Sleeve travel mm: 10.10...10.30
Test inj. tubing
                                                      SLEEVE POSITION
Outside diameter
x Wall thickness
                                                      Control-lever position
                                                                   Degree: -1
1/min: 1040
                   : 6.00x1.50x600
x Length mm
                                                      Speed
(A) Injection pump setting values
                                                      Cont.-rod travelmm: 15.20...17.80
    Insp. values in parentheses
    Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
START OF DELIVERY
                                                      Speed
                                                                    1/min: 700
                                                      Charge press. hPa : 900
Test pressure, bar: 25...27
                                                      Del.quantity cm3/: 189.0...191.0
1000H.: (186.0...194.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Prestroke mm
                    : 5.00...5.10
                    : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
G02
```

1000H.: (-) HIGHEST RATED SPEED 1st version Control-lever position degrees: 56...64 LOW IDLE 1/min : 225 Testing: Speed 1st c-rod trav.mm : 12.10 Speed 1/min : 1040...1050 2nd c-rod trav.mm : 4.00 Remarks: Speed 1/min: 1150...1180 4th speed 1/min: 1300 C-rod trav.mm : 0.00...1.00 to 2.9...3.1 mm. LOWEST RATED SPEED I Control-lever position degrees: 6...14 ADDITIONAL INFORMATION Testing: Speed 1/min : 100 C-rod trav.mm min : 6.30 1/min : 225 Speed C-rod trav.mm : 4.80...5.00 C-rod trav.mm : 2.00 3.2...3.4 mm. Speed 1/min: 330...390 compensator (LDA,ADA,ALDA) to 3.0...3.1 mm. 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.10...13.20 Measurement 1/min : 500 Speed 1st pressure hPa : -VDT-I-400/116. C-rod trav.mm : 12.50...12.60 2nd pressure hPa : 320 C-rod trav.mm : 12.90...13.00 FUEL-DELIVERY CHARACTERISTICS For sealing see VDT-I-400/117. 1st version Charge press. hPa : 900 1/min : 1000 Del.quantity cm3/: 184.0...192.0 1000H.: (182.0...194.0) on May 3, 1985 Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 175.0...179.0 1000H.: (173.0...181.0) 1-5-3-6-2-4. STARTING FUEL DELIVERY 1/min : 100 Speed G03

Del.quantity cm3/: 240.0...290.0

Contr.-rod trav.mm: 20.00...21.00

Contr.-rod tray.mm: 4.70...4.90

Because of flattening, set the spring preload on new delivery-valve holders

Delivery-valve spring pre-tension Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders

Check and set without ROBO diaphragam

For comb. with letter index see

Scania test specifications taken over Start of delivery - engine: 17° before Firing sequence of engine:

```
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : SCA 9,0 F
                    : 17.12.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no.
                    : 0 402 646 833
                                                       BASIC SETTING
                                                                      1/mi: 700
Injection pump
                                                       1st speed
Pump designation : PE6P12OA32ORS7102J
                                                       Contr.-rod trav.mm: 9.00...9.10
EP type number
                    : 0 412 626 812
Governor
Governor design. : RQV200...1100PA795
Governer no. : 0 421 813 536
                                                       Del.quantity cm3/: 10.6...10.8
                                                                     100H.: (10.3.,.11.1)
Customer-spec. information
                                                                     cm3/:0.5
Customer
                   : SCANIA
                                                       Dispersion
                    : DS9 01
                                                                     100H.: (0.8)
Engine
                                                       2nd speed 1/min: 225.0
Contr.-r@d trav. m: 5.1...5.3
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                       Del.quar/tity cm3/ : 1.5...1.9
                    : 38...42
                                                                     cm3/:0.3
                                                       Dispers%on
                                                                     100H.: (0.6)
Overflow valve
                    : 1 417 413 025
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
Inlet press., bar: 1.50
                                                       SLEEVE TRAVELS
Calibrating nozzle-holder
                                                       1st speed 1/min: 225
                 : 1 688 901 019
                                                         Sleeve travel mm: 0.90...1.10
 assembly
                                                       2nd speed 1/min: 350
                                                         Sleeve travel mm: 1.80...2.20
Opening
                   : 207...210
                                                       3rd speed 1/min: 800
 pressure, bar
                                                       Sleeve travel mm: 5.20...5.50
4th speed 1/min: 1150
Sleeve travel mm: 7.90...8.10
5th speed 1/min: 1210
Perforated-plate
 diameter mm
                    : 0,8
                                                         Sleeve travel mm: 8.50...8.80
Test inj. tubing : 1 680 750 015
                                                       SLEEVE POSITION
                                                       Control-lever position
Outside diameter
x Wall thickness
                                                                    Degree: -1
                                                                     1/min: 1200
                    : 6.00x1.50x600
x Length mm
                                                       Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    Insp. values in parentheses
Set constant delivery quant.
    per values
                                                       1st version
                                                       Speed
                                                                     1/min: 700
                                                       Del.quantity cm3/: 106.0...108.0
START OF DELIVERY
                                                                    1000H.: (103.0...111.0)
cm3/ : 5.00
1000H.: (8.00)
Test pressure, bar: 25...27
                                                       Dispersion
Prestroke mm
                    : 5.00...5.10
                    : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
                                                       HIGHEST RATED SPEED
G04
```

1st version Control-lever position degrees: 40...48 Testing: 1st c-rod trav.mm : 8.00 Speed 1/min: 1140...1150 2nd c-rod trav.mm: 4.00 1/min: 1190...1220 Speed 4th speed 1/min: 1350 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: 1/min : 100 Speed C-rod trav.mm min: 6.30 1/min : 225 Speed C-rod trav.mm : 4.80...5.00 C-rod trav.mm : 2.00 Speed 1/min : 280...340 STARTING FUEL DELIVERY Speed 1/min: 100 Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 LOW IDLE Speed 1/min : 225 Contr.-rod trav.mm: 4.80...5.00 Remarks: Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm. ADDITIONAL INFORMATION Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragam

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over on March 19, 1986 Start of delivery - engine: 15° before TDC Firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Date of mfg.
                                                                    : < 052
Note inst. in remarks column
                                                      Prestroke mm
                                                                          : 4.40...4.50
                                                                          : (4.35...4.55)
: 1- 2- 7- 3- 4- 5-
Test sheet
                    : SCA 14.2 A3 : 21.05.87
                                                      Cam sequence
                                                                            6-8
Edition
Superceeded
                    : 8.85
Calibrating oil
                   : ISO-4113
                                                      SD ang. spacing CS: 0-45-90-135-180-225-
SD ang. spacing CS: 270-315
Tolerance + - : 0.50 (0.75)
                    : 0 402 648 801
Combination no.
Injection pump
Pump designation
                   : PE8P120A920/4L$7002
EP type number
                   : 0 412 628 800
                                                      SD mark cyl. no. : 1
Governor
Governor design. : RQV250...1000PA547
                                                      BASIC SETTING
Governer no.
                   : 0 421 813 270
                                                                     1/mi: 700
                                                      1st speed
Customer-spec. information
                                                      Contr.-rod trav.mm: 13.20...13.30
Customer
                   : SCANIA
                    : DS14 06
                                                      Del.quantity cm3/ : 18.7...18.9
Engine
TEST BENCH REQUIREMENTS
                                                                    100H.: (18.4...19.2)
Calibrating-oil inlet temp. °C
                                                      Dispersion
                                                                    cm3/:0.6
                    : 38...42
                                                                    100H.: (0.9)
Overflow valve
                                                      2nd speed 1/min: 225.0
                    : 1 417 413 025
                                                      Contr.-rod trav. m: 4.9...5.1
                                                      Del.quantity cm3/: 1.0...1.4
Inlet press., bar : 1.50
                                                                    100H.: (-)
                                                                    cm3/: 0.3
Calibrating nozzle-holder
                                                      Dispersion
                                                                    100H.: (0.6)
              : 1 688 901 019
 assembly
Opening
                                                      (B) Setting of injection pump with
                   : 207...210
 pressure, bar
                                                          externally-mounted governor
                                                      SLEEVE TRAVELS
Perforated-plate
                    : 0,8
                                                      1st speed 1/min: 225
 diameter mm
                                                        Sleeve travel mm: 1.30...1.40
                                                      2nd speed 1/min: 340
                                                        Sleeve travel mm: 2.50...2.80 d speed 1/min: 550
Test in . tubing : 1 680 750 015
                                                      3rd speed
                                                        Sleeve travel mm: 4.00...4.30 th speed 1/min: 1045 Sleeve travel mm: 8.40...8.60
Outside diameter
x Wall thickness
                                                      4th speed
x Length mm
                 : 6.00x1.50x600
                                                      5th speed 1/min: 1150
                                                        Sleeve travel mm: 9.80...10.20
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      SLEEVE POSITION
    per values
                                                      Control-lever position
                                                                   Degree: -1
                                                      Speed 1/min: 1040
Cont.-rod travelmm: 15.20...17.80
START OF DELIVERY
Test pressure, bar: 25...27
Date of mfg. : 141
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Prestroke mm
                   : 5.00...5.10
                   : (4.95...5.15)
                                                      1st version
G06
```

```
Speed
                                                                 1/min : 500
Speed
              1/min: 700
Charge press. hPa: 900
Del.quantity cm3/: 187.0...189.0
1000H.: (184.0...192.0)
                                                    Del.quantity cm3/: 137.0...141.0
1000H.: (135.0...145.0)
Dispersion cm3/ : 6.00
             1000H.: (9.00)
                                                    STARTING FUEL DELIVERY
HIGHEST RATED SPEED
1st version
                                                    Speed
                                                                 1/min : 100
                                                    Del.quantity cm3/: 240.0...290.0
Control-lever
                                                                 1000H.: (-)
 position degrees: 58...66
                                                    Contr.-rod trav.mm: 20.00...21.00
Testing:
1st c-rod trav.mm : 12.20 ......
                                                    LOW IDLE
  Speed 1/min: 1040...1050
                                                    Speed 1/min : 225
2nd c-rod trav.mm : 4.00
                                                    Contr.-rod trav.mm: 4.40...4.60
 Speed
           1/min : 1140...1170
3rd c-rod trav.mm : 4.00
4th speed 1/min : 1250
                                                    Remarks:
  C-rod trav.mm : 0.00...1.00
                                                    Delivery-valve spring pre-tension
                                                    3.2...3.4 mm.
                                                    Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring
LOWEST RATED SPEED I
Control-lever
                                                    preload on new delivery-valve holders
 position degrees: 5...13
                                                    to 2.9...3.1 mm.
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 5.90
Speed 1/min : 225
C-rod trav.mm : 4.40...4.60
                                                    ADDITIONAL INFORMATION
            mm : 2.00
1/min : 310...370
C-rod trav.mm
Speed
 compensator (LDA,ADA,ALDA)
                                                    Check and set without ROBO diaphragam
1st version
Setting
Speed
            1/min : 500
Pressure
            hPa : 900
                                                    For comb. with letter index see
                                                    VDT-I-400/116.
Contr.-rod trav.mm: 13.20...13.30
Measurement
Speed 1/min : 500
1st pressure hPa : -
                                                    For sealing see VDT-I-400/117.
  C-rod trav.mm : 11.30...11.40
2nd pressure hPa : 350
                   : 12.80...12.90
  C-rod trav.mm
3rd pressure hPa : 230
                                                    Scania test specifications taken over
  C-rod trav.mm
                   : 11.90...12.10
                                                    on Aug. 19, 1983
                                                    Engine start of delivery: 180 BTDC
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
            1/min : 1000
Speed
Del.quantity cm3/: 184.0...192.0
1000H.: (182.0...194.0)
                                                    Engine firing sequence: 1-5-4-2-6-3-7-8
Charge press. hPa : -
G07
```

```
Cam sequence : 1- 2- 7- 3- 4- 5- 6- 8
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                   : SCA 14.2 A1
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
                  : 06.10.86
Edition
Superceeded
                                                                         270-315
                  : 10.84
                                                    Tolerance + - D
Calibrating oil : ISO-4113
                                                                       : 0.50 (0.75)
                  : 0 402 648 802
Combination no.
                                                    SD mark cyl. no. : 1
                                                    BASIC SETTING
Injection pump
Pump designation : PE8P12OA92OLS7002S
                                                                  1/mi: 700
EP type number
                  : 0 412 628 800
                                                    1st speed
Governor
Governor design. : RQV200...1050PA547
                                                    Contr.-rod trav.mm: 13.00...13.10
Governer no.
                  : 0 421 813 293
                                                   Del.quantity cm3/: 18.3...18.5
Customer-spec. information
                                                                 100H.: (18.0...18.8)
                  : SAAB-SCANIA
Customer
Engine
                   : DS14 07
                                                    Dispersion
                                                                 cm3/:0.6
TEST BENCH REQUIREMENTS
                                                                  100H.: (0.9)
Calibrating-oil inlet temp. OC
                                                    2nd speed
                                                                  1/min: 225.0
                   : 38...42
                                                    Contr.-rod trav. m: 4.4...4.6
                                                   Del.quantity cm3/: 1.0...1.4
100H.: (-)
Dispersion cm3/: 0.3
100H.: (0.6)
Overflow valve
                   : 1 417 413 025
Inlet press., bar: 1.50
                                                    (B) Setting of injection pump with
Calibrating nozzle-holder
                                                        externally-mounted governor
              : 1 688 901 019
 assembly
                                                    SLEEVE TRAVELS
                                                    1st speed 1/min: 225
Opening
                                                   Sleeve travel mm: 1.20...1.40
2nd speed 1/min: 280
Sleeve travel mm: 1.80...2.10
3rd speed 1/min: 350
                  : 207...210
pressure, bar
Perforated-plate
 diameter mm
                   : 0.8
                                                      Sleeve travel mm: 2.40...2.80
                                                                1/min: 1090
                                                    4th speed
Test inj. tubing : 1 680 750 015
                                                      Sleeve travel mm: 8.40...8.60
                                                    5th speed 1/min: 1200
                                                      Sleeve travel mm: 9.80...10.10
Outside diameter
x Wall whickness
                                                    SLEEVE POSITION
x Length mm
               : 6.00x1.50x600
                                                   Control-lever position
                                                                Degree: -1
(A) Injection pump setting values
                                                                 17min: 1100
    Insp. values in parentheses
                                                   Speed
                                                   Cont.-rod travelmm: 15.20...17.80
    Set constant delivery quant.
    per values
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
START OF DELIVERY
Test pressure, bar: 25...27
                                                   1st version
                                                                 1/min: 700
                                                   Speed
Prestroke mm
                   : 5.00...5.10
                                                   Charge press. hPa : 900
                                                   Del.guantity cm3/: 183.0...185.0
                   : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
                                                                1000H.: (180.0...188.0)
G08
```

```
Dispersion cm3/: 6.00
                                                    STARTING FUEL DELIVERY
             1000H.: (9.00)
HIGHEST RATED SPEED
                                                     Speed
                                                                1/min : 100
                                                    Del.quantity cm3/: 240.0...290.0
Contr.-rod trav.mm: 20.00...21.00
1st version
Control-lever
 position degrees: 57...65
                                                    LOW IDLE
Testing:
1st c-rod trav.mm : 12.00
                                                     Speed
                                                                 1/min : 225
           1/min: 1090...1100
                                                     Contr.-rod trav.mm: 4.40...4.60
  Speed
                                                    Del.quantity cm3/: 10.0...14.0
2nd c-rod trav.mm : 4.00
                                                                 1000H.: (-)
cm3/: 3.00
1000H.: (6.00)
           1/min : 1180...1210
  Speed
  h speed 1/min: 1300
C-rod trav.mm: 0.00...1.00
4th speed
                                                     Dispersion
LOWEST RATED SPEED I
                                                    Remarks:
                                                    Because of flattening, set the spring
Control-lever
                                                    preload on new delivery-valve holders
 position degrees: 5...13
                                                     to 2.9...3.1 mm.
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 5.90
           1/min : 225
Speed
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
                                                    ADDITIONAL INFORMATION
            1/min : 310...370
Speed
 compensator (LDA,ADA,ALDA)
                                                    Delivery-valve spring pre-tension
                                                     3.2...3.4 mm.
                                                    Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring
1st version
Setting
                                                    preload on new delivery-valve holders
Speed
             1/min : 500
            hPa : 900
                                                     to 3.0...3.1 mm.
Contr.-rod trav.mm: 13.00...13.10
Measurement
             1/min : 500
Speed
                                                    Check and set without ROBO diaphragam
1st pressure hPa : -
                   : 11.30...11.40
  C-rod trav.mm
2nd pressure hPa : 350
  C-rod trav.mm : 12.80...12.90
3rd pressure hPa : 230
                                                    For comb. with letter index see
                   : 11.90...12.10
                                                    VDT-I-400/116.
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
                                                    For sealing see VDT-I-400/117.
          1/min : 1000
Speed
Del.quantity cm3/: 176.0...184.0
1000H.: (174.0...186.0)
Charge press. hPa : -
Speed 1/min: 500
                                                    Scania test specifications taken over
Del.quantity cm3/: 137.0...141.0
                                                    on Aug. 19, 1983
                                                    Engine firing sequence: 1-5-4-2-6-3-7-8
             1000H.: (135.0...143.0)
G09
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1- 2- 7- 3- 4- 5-
                                                                            6- 8
Note inst. in remarks column
Test sheet
                    : SCA 14.2 D
                   : 12.09.86
: 8.84
                                                      SD ang. spacing CS: 0-45-90-135-180-225-
Edition
                                                                            270-315
Superceeded
                                                      Tolerance + - 0
                                                                          : 0.50 (0.75)
Calibrating oil : ISO-4113
                    : 0 402 648 807
Combination no.
                                                      SD mark cyl. no. : 1
Injection pump
                                                      START OF DELIVERY DIFFERENCE
Pump designation : PE8P120A920/4LS7008
EP type number
                   : 0 412 628 803
                                                      betw.c-rod trav.mm: 7.00...13.90
                                                     & c-rod tray max. : 21.00
Difference CS : 1.45...2.15
Governor
Governor design. : RQV200...950PA547-1
Governer no. : 0 421 813 360
                                                      BASIC SETTING
Customer-spec. information
                   : SAAB-SCANIA
                                                                     1/mi: 700
                                                      1st speed
Customer
                    : DSC14 01
                                                      Contr.-rod trav.mm: 13.90...14.00
Engine
TEST BENCH REQUIREMENTS
                                                      Del.quantity cm3/: 19.7...19.9
Calibrating-oil inlet temp. OC
                                                                    100H.: (19.4...20.2)
                    : 38...42
                                                      Dispersion
                                                                    cm3/:0.7
Overflow valve
                    : 1 417 413 025
                                                                    100H.: (1.0)
                                                     2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.7...4.9
Del.quantity cm3/: 1.4...1.8
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                                    100H.: (-) cm3/: 0.3
                : 1 688 901 019
 assembly
                                                      Dispersion
                                                                    100H.: (0.6)
Opening
                    : 207...210
 pressure, bar
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Perforated-plate
                    : 0,8
 diameter mm
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 225
                                                        Sleeve travel mm: 1.30...1.50
                   : 1 680 750 015
Test inj. tubing
                                                                   1/min: 270
                                                      2nd speed
                                                      Sleeve travel mm: 1.90...2.10
3rd speed 1/min: 360
Outside diameter
x Wall thickness
                                                        Sleeve travel mm: 2.60...3.00 th speed 1/min: 990 Sleeve travel mm: 7.80...8.00
                   : 6.00x1.50x600
x Length mm
                                                      4th speed
(A) Injection pump setting values
                                                      5th speed 1/min: 1120
    Insp. values in parentheses
    Set constant delivery quant.
                                                        Sleeve travel mm: 9.40...9.60
    per values
                                                      SLEEVE POSITION
START OF DELIVERY
                                                      Control-lever position
                                                                   Degree: -1
Test pressure, bar: 25...27
                                                     Speed 1/min: 1040
Cont.-rod travelmm: 15.20...17.80
                    : 4.50...4.60
Prestroke mm
                    : (4.45...4.65)
Contr.-rod trav.mm: 6.00...8.00
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
G10
```

Charge press. hPa : -1/min : 500 1st version Speed Del.quantity cm3/: 146.0...150.0 1/min: 700 Speed Charge press. hPa: 900 1000H.: (144.0...152.0) Del.quantity cm3/: 197.0...199.0 1000H.: (194.0...202.0) Dispersion cm3/: 7.00 STARTING FUEL DELIVERY 1000H.: (10.00) HIGHEST RATED SPEED 1/min : 100 Speed 1st version Del.quantity cm3/: 240.0...290.0 1000H.: (-) Control-lever Contr.-rod trav.mm: 20.00...21.00 position degrees: 56...64 Testing: LOW IDLE 1st c-rod trav.mm : 12.90 Speed 1/min : 990...1000 1/min : 225 Speed 2nd c-rod trav.mm: 4.00 Contr.-rod trav.mm: 4.70...4.90 Del.quantity cm3/: 14.0...18.0 1000H.: (-) Dispersion cm3/: 3.00 1/min : 1110...1140 4th speed 1/min : 1250 C-rod trav.mm : 0.00...1.00 1000H.: (6.00) LOWEST RATED SPEED I Control-lever Remarks: Because of flattening, set the spring position degrees: 6...14 preload on new delivery-valve holders to 2.9...3.1 mm. Testing: 1/min : 100 Speed C-rod trav.mm min : 6.20 Speed 1/min : 225 C-rod trav.mm : 4.70...4.90 mm : 2.00 1/min : 330...390 C-rod trav.mm ADDITIONAL INFORMATION Speed compensator (LDA,ADA,ALDA) Delivery-valve spring pre-tension 1st version 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm Setting 1/min : 500 Because of flattening, set the spring Speed hPa : 900 Pressure preload on new delivery-valve holders Contr.-rod trav.mm: 13.90...14.00 to 3.0...3.1 mm. Measurement 1/min : 500 Speed Check and set without ROBO diaphragam 1st pressure hPa : 11.00...11.10 C-rod trav.mm 2nd pressure hPa : 335 : 13.10...13.20 C-rod trav.mm 3rd pressure hPa : 215 For comb. with letter index see C-rod trav.mm : 11.60...11.80 VDT-1-400/116. FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 Speed 1/min : 950 For sealing see VDT-I-400/117. Del.quantity cm3/: 190.0...198.0 1000H.: (188.0...200.0)

619

Scania test specifications taken over on Aug. 19, 1983 Engine firing sequence: 1-5-4-2-6-3-7-8

Start of delivery - engine: 22° before TDC at control-rod travel = 6.0... 8.0 mm

```
: 1- 2- 7- 3- 4- 5-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence
                                                                         6-
Note inst. in remarks column
                   : SCA 14,2 D1
Test sheet
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
Edition
                   : 12.09.86
                   : 5.85
                                                                         270-315
Superceeded
                                                    Tolerance + - 0
Calibrating oil
                  : ISO-4113
                                                                      : 0.50 (0.75)
Combination no.
                   : 0 402 648 811
                                                    SD mark cyl. no. : 1
                                                    START OF DELIVERY DIFFERENCE
Injection pump
Pump designation : PE8P120A920/4L87008
EP type number
                   : 0 412 628 803
                                                    betw.c-rod trav.mm: 7.00...13.90
                                                    & c-rod tray max. : 21.00
Difference CS : 1.45...2.15
Governor
Governor design.
Governer no.
                  : RQV275...950PA547-4
                   : 0 421 813 435
                                                    BASIC SETTING
Customer-spec. information
                  : SAAB-SCANIA
                                                                  1/mi: 700
Customer
                                                    1st speed
Engine
                   : DSC14 06
                                                    Contr.-rod trav.mm: 13.90...14.00
TEST BENCH REQUIREMENTS
                                                    Del.quantity cm3/: 19.7...19.9
Calibrating-oil inlet temp. OC
                                                                 100H.: (19.4...20.2)
                   : 38...42
                                                                 cm3/:0.7
                                                    Dispersion
Overflow valve
                   : 1 417 413 025
                                                                 100H.: (1.0)
                                                                 1/min: 275.0
Inlet press., bar : 1.50
                                                    2nd speed
                                                   Contr.-rod trav. m: 4.7...4.9
Del.quantity cm3/:-
Calibrating nozzle-holder
                : 1 688 901 019
                                                                 100H.: (-)
 assembly
                                                                 cm3/:0.3
                                                    Dispersion
                                                                 100H.: (0.6)
Opening
                  : 207...210
pressure, bar
                                                    (B) Setting of injection pump with
                                                        externally-mounted governor
Perforated-plate
diameter mm
                   : 0.8
                                                    SLEEVE TRAVELS
                                                    1st speed 1/min: 275
                                                      Sleeve travel mm: 1.90...2.10
Test inj. tubing
                  : 1 680 750 015
                                                    2nd speed 1/min: 430
                                                      Sleeve travel mm: 3.70...4.00 d speed 1/min: 500
Outside diameter
x Wall thickness
                                                    3rd speed
                                                      Sleeve travel mm: 4.80...5.00
                  : 6.00x1.50x600
x Length mm
                                                      th speed 1/min: 1000
Sleeve travel mm: 7.60...7.80
                                                    4th speed
(A) Injection pump setting values
                                                    5th speed 1/min: 1180
    Insp. values in parentheses
    Set constant delivery quant.
                                                      Sleeve travel mm: 9.20...9.40
    per values ____
                                                    SLEEVE POSITION
START OF DELIVERY
                                                    Control-lever position
                                                                Degree: -1
Test pressure, bar: 25...27
                                                                 1/min: 1100
                                                    Speed
                   : 4.50...4.60
                                                   Cont.-rod travelmm: 15.20...17.80
Prestroke @m
                   : (4.45...4.65)
Contr.-rod trav.mm: 6.00...8.00
                                                   FULL-LOAD DELIV. AT FULL-LOAD STOP
G13
```

1st version Speed 1/min: 700 Charge press. hPa : 900 Del.quantity cm3/: 197.0...199.0 1000H.: (194.0...202.0) cm3/ : 7.00 Dispersion 1000H.: (10.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 55...63 Testing: 1st c-rod trav.mm : 12.90 Speed 1/min: 990...1000 2nd c-rod trav.mm : 4.00 1/min : 1170...1200 1/min : 1300 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 5...13 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.20 Speed 1/min : 275 : 4.70...4.90 C-rod trav.mm : 2.00 C-rod trav.mm 1/min : 330...390 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.90...14.00 Measurement 1/min : 500 Speed 1st pressure hPa : ~ C-rod trav.mm : 11.00...11.10 2nd pressure hPa : 335 C-rod trav.mm : 13.10...13.20 3rd pressure hPa : 215 C-rod trav.mm : 11.60...11.80 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 950 Speed Del.quantity cm3/: 190.0...198.0 1000H.: (188.0...200.0)

G14

Charge press. hPa: 1/min : 500 Speed Del.quantity cm3/: 146.0...150.0 1000H.: (144.0...152.0) STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 LOW IDLE 1/min : 275 Speed Contrariod trav.mm: 4.70...4.90 Dispersion cm3/: 3.00 1000H.: (6.00) Remarks: Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm. ADDITIONAL INFORMATION

Delivery-valve spring pre-tension 3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Check and set without ROBO diaphragam

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Scania test specifications taken over on Nov. 2, 1983
Start of delivery - engine: 22° before TDC at control-rod travel = 6.0...
8.0 mm
Engine firing sequence: 1-5-4-2-6-3-7-8

```
: 1- 2- 7- 3- 4- 5-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence
                                                                             6- 8
Note inst. in remarks column
Test sheet
                    : SCA 14,2 D2
                    : 12.09.86
                                                       SD ang. spacing CS: 0-45-90-135-180-225-
Edition
Superceeded
                    : 4.86
                                                                             270-315
                                                       Tolerance + - 0
Calibrating oil
                    : ISO-4113
                                                                           : 0.50 (0.75)
                    : 0 402 648 815
Combination no.
                                                       SD mark cyl. no. : 1
                                                       START OF DELIVERY DIFFERENCE
Injection pump
Pump designation : PE8P120A920/4LS7008X
                                                       betw.c-rod trav.mm: 7.00...12.80 & c-rod trav max. : 21.00 Difference CS : 1.05...1.75
EP type number
                    : 0 412 628 812
Governor
Governor design. : RQV200...950PA547-6
Governer no.
                    : 0 421 813 499
                                                       BASIC SETTING
Customer-spec. information
Customer
                    : SAAB-SCANIA
                                                       1st speed
                                                                      1/mi: 700
                                                       Contr.-rod trav.mm: 12.80...12.90
Engine
                    : DSC14 02
                                                       Del.quantity cm3/: 18.3...18.5
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                                     100H.: (18.0...18.8)
                    : 38...42
                                                       Dispersion
                                                                     cm3/:0.7
Overflow valve
                    : 1 417 413 025
                                                                     100H.: (1.0)
                                                       2nd speed 1/min: 225.0
Contr.-rod trav. m: 4.7...4.9
Inlet press., bar : 1.50
                                                      Del.quantity cm3/: 1.4...1.8
Calibrating nozzle-holder
                                                                     100H.: (-) cm3/: 0.3
                 : 1 688 901 019
 assembly
                                                       Dispersion
                                                                     100H.: (0.6)
Opening
                    : 207...210
 pressure, bar
                                                       (B) Setting of injection pump with
Perforated-plate
                                                           externally-mounted governor
 diameter mm
                    : 0,8
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 225
Sleeve travel mm: 1.30...1.40
                   : 1 680 750 015
Test inj. tubing
                                                       2nd speed
                                                                    1/min: 260
                                                         Sleeve travel mm: 1.70...1.90
Outside diameter
                                                       3rd speed 1/min: 360
x Wall thickness
                                                         Sleeve travel mm: 2.60...3.00 th speed 1/min: 1000 Sleeve travel mm: 7.90...9.00
                    : 6.00x1.50x600
x Length mm
                                                       4th speed
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       5th speed 1/min: 1110
                                                         Sleeve travel mm: 9.30...9.50
    per values
                                                       SLEEVE POSITION
START OF DELIVERY
                                                       Control-lever position
Test pressure, bar: 25...27
                                                                    Degree: -1
                                                      Speed 1/min: 1040
Cont.-rod travelmm: 15.20...17.80
Prestroke mm
                    : 4.50...4.60
                    : (4.45...4.65)
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Contr.-rod trav.mm: 6.00...8.00
G16
```

```
Del.quantity cm3/: 146.0...150.0
                                                                 1000H.: (144.0...152.0)
1st version
Speed
              1/min: 700
Charge press. hPa : 900
Del.quantity cm3/: 183.0...185.0
1000H:: (180.0...188.0)
Dispersion cm3/: 7.00
                                                    STARTING FUEL DELIVERY
             1000H.: (10.00)
                                                                1/min : 100
                                                    Speed
                                                    Del.quantity cm3/: 240.0...290.0
HIGHEST RATED SPEED
                                                                 1000H.: (-)
                                                    Contr.-rod trav.mm: 20.00...21.00
1st version
Control-lever
 position degrees: 55...63
                                                    LOW IDLE
Testing:
                                                    Speed
                                                                1/min : 225
                                                    Contr.-rod trav.mm: 4.70...4.90
1st c-rod trav.mm : 11.80
                                                   Del.quantity cm3/: 14.0...18.0
1000H.: (-)
Dispersion cm3/: 3.00
  Speed 1/min: 990...1000
2nd c-rod trav.mm : 4.00
                                         1 Dispersion
            1/min : 1090...1120
  Speed
4th speed 1/min : 1250
                                                                1000H.: (6.00)
  C-rod trav.mm : 0.00...1.00
                                                    Remarks:
LOWEST RATED SPEED I
                                                    Because of flattening, set the spring
Control-lever
                                                    preload on new delivery-valve holders
                                                    to 2.9...3.1 mm.
 position degrees: 6...14
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 6.20 Speed 1/min : 225
                                                    ADDITIONAL INFORMATION
C-rod trav.mm : 4.70...4.90
            mm : 2.00
1/min : 330...390
C-rod trav.mm
Speed
 compensator (LDA,ADA,ALDA)
                                                    Delivery-valve spring pre-tension
                                                    3.2...3.4 mm.
                                                   Permissible alteration of 3.0...3.5 mm
                                                   Because of flattening, set the spring
1st version
Setting
                                                    preload on new delivery-valve holders
Speed
            1/min : 500
                                                    to 3.0...3.1 mm.
            hPa : 900
Pressure
Contr.-rod trav.mm: 12.80...12.90
Measurement
            1/min : 500
                                                    Check and set without ROBO diaphragam
Speed
1st pressure hPa
  C-rod trav.mm
                   : 11.00...11.10
3rd pressure hPa :?
                                                   For comb. with letter index see
  C-rod trav.mm
                   : 11.60...11.80
                                                   VDT-I-400/116.
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
            1/min : 950
                                                   For sealing see VDT-I-400/117.
Speed
Del.quantity cm3/: 177.0...185.0
             1000H.: (175.0...187.0)
Charge press. hPa : -
            1/min : 500
Speed
G17
```

Scania test specifications taken over on May 3, 1985 Start of delivery - engine: 22° before TDC at control-rod travel = 6.0... 8.0 mm Engine firing sequence: 1-5-4-2-6-3-7-8

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                           : 4.40...4.50
                                                       Prestroke mm
                                                                           : (4.35...4.55)
                                                       Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                       Cam sequence : 1-5-3-6-2-4
Test sheet
                    : SCA 11.0 U4
: 05.06.87
Edition
Superceeded : 11.84
Calibrating oil : ISO-4113
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
Combination no.
                    : 0 402 676 800
                                                       SD mark cyl. no. : 1
Injection pump
Pump designation : PE6P120A720RS7001
                                                       BASIC SETTING
EP type number
                   : 0 412 626 800
                                                                    1/mi: 700
Governor
                                                       1st speed
Governor design. : RSV350...1100P1/481
Governer no. : 0 421 833 121
                                                       Contr.-rod trav.mm: 13.20...13.30
                                                       Del.quantity cm3/: 19.9...20.1
Customer-spec. information
Customer
                    : SAAB-SCANIA
                                                                     100H.: (19.6...20.4)
TEST BENCH REQUIREMENTS
                                                                     cm3/:0.6
                                                       Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
inlet temp.
                                                                     100H.: (0.9)
Overflow valve
                                                                     1/min: 350.0
                                                       2nd speed
                                                      Contr.-rod trav. m: 4.4...4.6
Del.quantity cm3/: 1.3...1.7
100H.: (-)
                    : 1 417 413 025
Inlet press., bar : 1.50
                                                                     cm3/: 0.3
100H.: (0.6)
                                                       Dispersion
Calibrating nozzle-holder
              : 1 688 901 019
 assembly
                                                       SLEEVE POSITION
                                                       Control-lever position
Opening
                   : 207...210
                                                                    Degree: -3
1/min: 800
 pressure, bar
                                                       Cont.-rod travelmm: 0.30...1.00
Perforated-plate
                    : 0.8
 diameter mm
                                                       Governor-spring reload
                                                       Notch setting x : 6.00
                   : 1 680 750 015
Test inj. tubing
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diameter
x Wall thickness
                                                       1st version
x Length mm
                   : 6.00x1.50x600
                                                       Speed
                                                                     1/min: 700
                                                      Del.quantity cm3/: 199.0...201.0
1000H.: (196.0...204.0)
Dispersion cm3/: 6.00
(A) Enjection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                                    1000H.: (9.00)
    per values
                                                      HIGHEST RATED SPEED
START OF DELIVERY
                                                       1st version
Test pressure, bar: 25...27
                                                      Control-lever
                : 141
Date of mfg.
                                                       position degrees: 62...70
                                                      Testing:
Prestroke mm
                    : 5.00...5.10
                    : (4.95...5.15)
                                                      1st c-rod trav.mm : 12.20
                                                        Speed 1/min: 1090...1100
Contr.-rod trav.mm: 9.00...12.00
                                                      2nd c-rod trav.mm : 4.00
Date of mfg. : < 052
G19
```

```
1/min : 1170...1200
  Speed
4th speed 1/min: 1300
  C-rod trav.mm : 0.30...1.70
LOWEST RATED SPEED I
Control-lever
 position degrees: 27...35
Setting point w/out aux. spring
             1/min : 350
Contr.-rod trav.mm: 4.0
             1/min : 350
Speed
C-rod trav.mm : 3.90...4.10
C-rod trav.mm : 2.00
             1/min : 440...500
Speed
FUEL-DELIVERY CHARACTERISTICS
             1/min : 1000
Speed
Del.quantity cm3/: 193.0...201.0
             1000H.: (190.0...204.0)
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/: 240.0...290.0
             1000H.: (-)
Contr.-rod trav.mm: 20.00...21.00
LOW IDLE
Speed
             1/min : 350
Contr.-rod trav.mm: 4.40...4.60
Del.quantity cm3/: 13.0...17.0
1000H.: (-)
Dispersion cm3/: 3.00
1000H.: (6.00)
Remarks:
                    : DS11 40, 41, 42
: DSI11 40, 44
Delivery-valve spring pre-tension
3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm
ADDITIONAL INFORMATION
Check and set without ROBO diaphragam
For comb. with letter index see
VDT-1-400/116.
```

For sealing see VDT-I-400/117.

Scania test specifications taken over on Aug. 18, 1983 Start of delivery on engine.

Engine model DS 11 - 17° before top dead center.

Engine model DSI 11 - 16° before top dead center.

Firing sequence of engine: 1-5-3-6-2-4.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : SCA 9,0 A
                    : 15.05.87
: 3.86
Edition
Superceeded
Calibrating oil
                   : ISO-4113
                                                      SD mark cyl. no. : 1
Combination no.
                    : 0 402 746 800
                                                      BASIC SETTING
Injection pump
                                                                     1/mi: 700
                                                      1st speed
Pump designation : PE6P120A320RS7102
                    : 0 412 626 804
EP type number
                                                      Contr.-rod trav.mm: 12.00...12.10
Governor
Governor design. : RQV200...1100PA712-1
                                                      Del.quantity cm3/: 16.3...16.5
Governer no.
                    : 0 421 813 448
                                                                    100H.: (16.0...16.8)
Customer-spec. information
Customer
                    : SCANIA
                                                      Dispersion
                                                                    cm3/:0.6
                    : DS9 01
Engine
                                                                    100H.: (0.9)
TEST BENCH REQUIREMENTS
                                                      2nd speed
                                                                    1/min: 225.0
                                                      Contr.-rod trav. m: 4.6...5.2
Calibrating-oil
                                                      Del.quantity cm3/: 1.5...1.9
100H.: (1.3...2.1)
                    : 38...42
                                                                    cm3/ : 0.3
                                                      Dispersion
Overflow valve
                                                                    100H.: (0.6)
                    : 1 417 413 025
                                                      (B) Setting of injection pump with
Inlet press., bar : 1.50
                                                          externally-mounted governor
                                                      SLEEVE TRAVELS
Calibrating nozzle-holder
                  : 1 688 901 019
                                                      1st speed 1/min: 225
 assembly
                                                        Sleeve travel mm: 1.10...1.50
                                                      2nd speed 1/min: 350
Opening
                    : 207...210
                                                        Sleeve travel mm: 2.60...3.20
 pressure, bar
                                                      3rd speed 1/min: 700
Sleeve travel mm: 4.50...5.10
Perforated-plate
                                                        th speed 1/min: 1145
Sleeve travel mm: 7.50...7.70
 diameter mm
                    : 0.8
                                                      4th speed
                                                      5th speed 1/min: 1290
                   : 1 680 750 015
                                                        Sleeve travel mm: 8.80...9.20
Test inj. tubing
                                                      SLEEVE POSITION
Outside diameter
                                                      Control-lever position
x Wall thickness
                                                                   Degree: -1
1/min: 1160
x Length mm
                   : 6.00x1.50x600
                                                      Speed
(A) Injection pump setting values
                                                      Cont.-rod travelmm: 15.20...17.80
    însp. values in parentheses
Set constant delivery quant.
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                      1st version
                                                                    1/min: 700
START OF DELIVERY
                                                      Speed
                                                      Charge press. hPa : 900
Test pressure, bar: 25...27
                                                     Del.quantity cm3/: 163.0...165.0
1000H.: (160.0...168.0)
Dispersion cm3/: 6.00
1000H.: (9.00)
Prestroke mm
                    : 5.00...5.10
                    : (4.95...5.15)
Contr.-rod trav.mm: 9.00...12.00
G21
```

HIGHEST RATED SPEED STARTING FUEL DELIVERY 1st version Control-lever position degrees: 54...62 Speed 1/min: 100 Del.quantity cm3/: 240.0...290.0 1000H.: (236.0...294.0) Testing: Contra-rod trav.mm: 20.00...21.00 1st c-rod trav.mm : 11.00 1/min : 1140...1150 Speed 2nd c-rod trav.mm: 4.00 LOW IDLE Speed 1/min: 1275...1305 th speed 1/min: 1400 C-rod trav.mm: 0.00...1.00 4th speed Speed 1/min : 225 Contr.-rod trav.mm: 4.60...5.20 Del.quantity cm3/: 15.0...19.0 1000H:: (13.0...21.0) Dispersion cm3/: 3.00 LOWEST RATED SPEED I Control-lever 1000H.: (6.00) position degrees: 6...14 Remarks: Testing: Because of flattening, set the spring preload on new delivery-valve holders 1/min : 100 Speed C-rod trav.mm min : 6.30 1/min : 225 to 2.9...3.1 mm. Speed C-rod trav.mm : 4.60...5.20 C-rod trav.mm : 2.00 1/min : 300...360 Speed CONSTANT REGULATION ADDITIONAL INFORMATION 1/min : 225...365 Speed compensator (LDA\_ADA\_ALDA) Delivery-valve spring pre-tension 3.2...3.4 mm. 1st version Setting Permissible alteration of 3.0...3.5 mm 1/min : 500 Because of flattening, set the spring Speed hPa : 900 preload on new delivery-valve holders Pressure Contr.-rod trav.mm: 12.00...12.10 to 3.0...3.1 mm. Measurement 1/min : 500 Speed 1st pressure hPa Check and set without ROBO diaphragam : 11.15...11.55 C-rod tray.mm : 420 2nd pressure hPa : 11.70...11.80 C-rod trav.mm : 380 3rd pressure hPa C-rod trav.mm : 11.50...11.70 for comb. with letter index see VDT-I-400/116. FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 1100 for sealing see VDT-I-400/117. Speed Del.quantity cm3/: 160.0...168.0 1000H.: (158.0...170.0) Charge press. hPa : -1/min : 500 Speed Scania test specifications taken over Del.quantity cm3/: 141.0...145.0 1000H.: (139.0...147.0) on Oct. 4, 1984 Start of delivery - engine: 15° before

TDC Firing sequence of engine: 1-5-3-6-2-4.	I 1 1
	! ! !
	1 1
	1 1
	! ! !
	]   
	! ! !
	;   
	;   
G23	

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Cam sequence
Note inst. in remarks column
Test sheet
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : SCA 9,0 C
                    : 15.05.87
Edition
Superceeded
                    : 12.85
Calibrating oil
                    : ISO-4113
                                                        SD mark cyl. no. : 1
                    : 0 402 746 801
                                                        START OF DELIVERY DIFFERENCE
Combination no.
Injection pump
                                                        betw.c-rod trav.mm: 7.00...12.50
                                                        & c-rod tray max. : 21.00
Difference CS : 1.00...1.70
Pump designation
                    : PE6P120A320RS7103
EP type number
                    : 0 412 626 805
Governor
Governor design. : RQV200...1100PA712
                                                        BASIC SETTING
Governer no.
                    : 0 421 813 442
                                                                        1/mi: 700
                                                        1st speed
Customer-spec. information
                                                        Contr.-rod trav.mm: 12.50...12.60
                    : SAAB-SCANIA
Customer
                     : DSC 9 D1
                                                        Del.quantity cm3/: 17.8...18.0
Engine
TEST BENCH REQUIREMENTS
                                                                       100H.: (17.5...18.3)
Calibrating-oil inlet temp. °C
                                                        Dispersion
                                                                       cm3/:0.7
                     : 38...42
                                                                       100H.: (1.0)
Overflow valve
                     : 1 417 413 025
                                                                       1/min: 225.0
                                                        2nd speed
                                                        Contr.-rod trav. m: 4.4...5.0
                                                        Del.quantity cm3/: 1.5...1.9
Inlet press., bar : 1.50
                                                                       100H.: (1.3...2.1)
                                                                       cm3/: 0.3
Calibrating nozzle-holder
                                                        Dispersion
                : 1 688 901 019
                                                                       100H.: (0.6)
 assembly
                                                        (B) Setting of injection pump with externally-mounted governor
Opening.
                    : 207...210
 pressure, bar
                                                        SLEEVE TRAVELS
Perforated-plate
 diameter mm
                     : 0,8
                                                        1st speed 1/min: 225
                                                          Sleeve travel mm: 1.10...1.50
                                                                     1/min: 350
                                                        2nd speed
                                                          Sleeve travel mm: 2.60...3.20
d speed 1/min: 700
Sleeve travel mm: 4.50...5.10
th speed 1/min: 1145
Sleeve travel mm: 7.50...7.70
Test inj. tubing
                   : 1 680 750 015
                                                        3rd speed
Outside diameter
x Wall thickness
                                                        4th speed
                    : 6.00x1.50x600
x Length mm
                                                        5th speed 1/min: 1300
Sleeve travel mm: 8.90...9.30
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        SLEEVE POSITION
    per values ____
                                                        Control-lever position
                                                        Degree: -1
Speed 1/min: 1150
Cont.-rod travelmm: 15.20...17.80
START OF DELIVERY
Test pressure, bar: 25...27
                     : 4.50 ... 4.60
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Prestroke mm
                    : (4.45...4.65)
Contr.-rod trav.mm: 6.00...8.00
                                                        1st version
G24
```

Speed 1/min: 700 1/min : 500 Speed Charge press. hPa: 900
Del.quantity cm3/: 178.0...180.0
1000H.: (175.0...183.0)
Dispersion cm3/: 7.00 Del.quantity cm3/: 138.0...142.0 1000H.: (136.0...144.0) 1000H.: (10.00) STARTING FUEL DELIVERY HIGHEST RATED SPEED 1st version Speed 1/min : 100 Del.quantity cm3/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 Control-lever position degrees: 55...63 Testing: 1st c-rod trav.mm : 11.50 LOW IDLE Speed 1/min: 1140...1150 2nd c-rod trav.mm : 4.00 1/min : 225 Speed 1/min : 1285...1315 Contr.-rod trav.mm: 4.40...5.00 Speed 4th speed 1/min: 1400 Del.quantity cm3/: 15.0...19.0 1000H: (13.0...21.0) cm3/: 3.00 1000H: (6.00) C-rod trav.mm : 0.00...1.00 Dispersion LOWEST RATED SPEED I Control-lever position degrees: 6...14 Remarks: Because of flattening, set the spring Testing: preload on new delivery-valve holders 1/min : 125 to 2.9...3.1 mm. Speed C-rod trav.mm min : 6.10 Speed 1/min: 225 C-rod trav.mm : 4.40...5.00 CONSTANT REGULATION ADDITIONAL INFORMATION 1/min : 225...365 Speed compensator (LDA,ADA,ALDA) Delivery-valve spring pre-tension 3.2...3.4 mm. 1st version Permissible alteration of 3.0...3.5 mm Setting Because of flattening, set the spring 1/min : 500 Speed hPa : 900 Pressure preload on new delivery-valve holders Contr.-rod trav.mm: 12.50...12.60 to 3.0...3.1 mm. Measurement Speed 1/min: 500 1st pressure hPa : -Check and set without ROBO diaphragam : 10.10...10.50 C-rod trav.mm 2nd pressure hPa : 435 : 11.90...12.00 C-rod trav.mm 3rd pressure hPa : 335 : 10.60...10.80 For comb. with letter index see C-rod trav.mm VDT-I-400/116. FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 1100 Scania test specifications taken over Speed Del.quantity cm3/: 177.0...185.0 1000H.: (175.0...187.0) on Oct. 4, 1984 Start of delivery - engine: 180 before Charge press. hPa : -TDC at control-rod travel = **G25** 

6.00...8.00 mm
Firing sequence of engine:
1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence : 1- 3- 4- 2 Note inst. in remarks column Tes't sheet SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) : MB 5,7 A 14 : 10.04.87 Edition Superceeded : 11.85 : ISO-4113 BASIC SETTING Calibrating oil : 0 403 444 110 Combination no. 1/mi: 1300 1st speed Injection pump Contr.-rod trav.mm: 11.10...11.20 Pump designation : PES4MW100/720RS1127 EP type number : 0 413 404 103 Del.quantity cm3/: 8.5...8.7 Governor Governor design. : RQV300...1300MW48-1 Governor no. : 0 420 083 084 100H.: (8.3...8.9) Dispersion cm3/: 0.35Customer-spec. information Customer : DB 100H.: (0.6) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.8...7.9 Engine : OM 364 A Del.quantity cm3/: 1.0...1.4 1st version kW : 85.0 100H.: (0.8...1.6) cm3/: 0.35 100H.: (0.5) Speed 1/min: 2600 Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -1 Overflow valve Speed 17min: 1330 : 1 417 413 000 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.50 Calibrating nozzle-holder 1st version : 0 681 343 009 1/min: 1300 assembly Speed Del.quantity cm3/: 85.0...87.0 1000H: (83.0...89.0) cm3/: 3.50 Opening pressure, bar : 172...175 Dispersion 1000H.: (6.00) Test inj. tubing : 1 680 750 008 HIGHEST RATED SPEED 1st version Control-lever Outside diameter x Wall thickness position degrees: 50...58 : 6.00x2.00x600 x Length mm Testing: (A) Injection pump setting values 1st c-rod trav.mm : 10.10 Insp. values in parentheses Set constant delivery quant. Speed 1/min: 1340...1350 2nd c-rod trav.mm : 4.00 Speed 1/min: 1430...1460 4th speed 1/min: 1550 per values START OF DELIVERY C-rod trav.mm ? 9.00...1.00 Test pressure, bar: 30...32 LOWEST RATED SPEED I : 3.70...3.80 Control-lever Prestroke mm : (3.65...3.85) position degrees: 17...25 Contr.-rod trav.mm: 9.00...12.00 Setting point w/out aux. spring **G27** 

```
Speed
              1/min : 300
Contr.-rod trav.mm: 7.85
Testing:
               1/min : 100
Speed
C-rod trav.mm min: 9.50
Speed 1/min: 300
C-rod trav.mm: 7.80...7.90
C-rod trav.mm
CONSTANT REGULATION
               1/min: 330...600
Speed
TORQUE CONTROL
Torque-control curve - 1st version
              1/min : 1300
1st speed
C-rod trav.mm : 11.10...11.20
2nd speed 1/min : 750
                       : 11.90...12.10
  C-rod trav.mm
3rd speed 1/min : 585
C-rod trav.mm : 12.10...12.30
4th speed 1/min : 1000 : C-rod trav.mm : 11.10...11.30
SWITCH-OVER POINT
               1/min : 230 (250)
Speed
FUEL-DELIVERY CHARACTERISTICS
               1/min : 750
Speed
Del.quantity cm3/: 84.5...86.5
1000H:: (82.5...88.5)
Dispersion cm3/: 5.00
               1000H.: (7.00)
1/min: 585
Speed
Del.quantity cm3/: 80.5...83.5
               1000H.: (78.5...86.5)
               cm3/: 5.00
1000H.: 7.00
Dispersion
STARTING FUEL DELIVERY
               1/min : 100
Speed
Del.quantity cm3/: 80.9...90.0
1000H.: (77.0...93.0)
LOW IDLE
Speed
               1/min : 300
Contr.-rod trav.mm: 7.80...7.90
Del.quantity cm3/: 10.0...14.0
               1000H.: (8.0...16.0)
cm3/: 3.50
1000H.: (5.50)
Dispersion
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                            : 1- 3- 4- 2
                                                        Cam sequence
Note inst. in remarks column
                                                        SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75)
Test sheet
                    : MB 5,7 A 19
                    : 10.04.87
Edition
Superceeded
                    : ISO-4113
Calibrating oil
                                                        BASIC SETTING
                    : 0 403 444 112
                                                                   1/mi: 1300
Combination no.
                                                        1st speed
Injection pump
                                                        Contr.-rod trav.mm: 11.10...11.20
Pump designation : PES4MW100/720RS1127
                    : 0 413 404 103
                                                        Del.quantity cm3/: 8.5...8.7
EP type number
Governor
Governor design. : RQV300...1300MW48-2
                                                                      100H.: (8.3...8.9)
Governer no.
                    : 0 420 083 110
                                                                      cm3/: 0.35
                                                        Dispersion
Customer-spec. information
                                                                      100H.: (0.6)
Customer
                                                       2nd speed 1/min: 300.0

Contr.-rod trav. m: 7.8...7.9

Del.quantity cm3/: 1.0...1.4

100H.: (0.8...1.6)

Dispersion cm3/: 0.35
                    : OM 364 A
Engine
1st version kW : 85.0
              1/min: 2600
Speed
TEST BENCH REQUIREMENTS
                                                                       100H.: (0.5)
Calibrating-oil inlet temp. °C
                                                        SLEEVE POSITION
                    : 38...42
                                                        Control-lever position
                                                       Degree: -1
Speed 1/min: 1330
Cont.-rod travelmm: 15.20...17.80
Overflow valve
                     : 1 417 413 000
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                        1st version
                   : 0 681 343 009
                                                                      1/min: 1300
 assembly
                                                        Speed
                                                       Del.quantity cm3/: 85.0...87.0
1000H.: (83.0...89.0)
Dispersion cm3/: 3.50
1000H.: (6.00)
Opening
 pressure, bar
                   : 172...175
                    : 1 680 750 008
                                                        HIGHEST RATED SPEED
Test inj. tubing
                                                        1st version
                                                        Control-lever
Outside diameter
x Wall thickness
                                                         position degrees: 50...58
                    : 6.00x2.00x600
x Length mm
                                                        Testing:
(A) Injection pump setting values
                                                        1st c-rod trav.mm : 10.10
                                                                                                  =.
    Insp. values in parentheses
Set constant delivery quant.
                                                          Speed 1/min: 1340...1350
                                                        2nd c-rod trav.mm : 4.00
                                                          Speed 1/min: 1430...1460
    per values ____
                                                        4th speed 1/min: 1550
                                                          C-rod trav.mm : 0.00...1.00
START OF DELIVERY
Test pressure, bar: 30...32
                                                        LOWEST RATED SPEED I
                    : 3.70...3.80
                                                        Control-lever
Prestroke mm
                                                        position degrees: 17...25
                    : (3.65...3.85)
Contr,-rod trav.mm: 9.00...12.00
                                                        Setting point w/out aux. spring
H01
```

```
Speed
             1/min : 300
Contr.-rod trav.mm: 7.85
Testing:
              1/min: 100
Speed
C-rod trav.mm min: 9.50
Speed 1/min: 300
C-rod trav.mm: 7.80...7.90
CONSTANT REGULATION
Speed
              1/min: 330...600
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 1300
1st speed
             v.mm : 11.10...11.20
1/min : 750
  C-rod trav.mm
2nd speed
  C-rod trav.mm : 11.80...12.10
3rd speed 1/min: 585
  C-rod trav.mm : 12.10...12.30
4th speed 1/min : 1000
  C-rod trav.mm : 11.10...11.30
SWITCH-OVER POINT
Speed
              1/min : 230 (250)
FUEL-DELIVERY CHARACTERISTICS
              1/min : 750
Speed
Del.quantity cm3/: 84.5...86.5
1000H.: (82.5...88.5)
Dispersion cm3/: 5.00
1000H.: (7.09)
Speed 11.17min: 585
Del.quantity cm3/: 80.5...83.5
              1000H.: (78.5...86.5)
               cm3/: 5.00
Dispersion
              1000Ha: 7.00
STARTING FUEL DELIVERY
              1 min : 100
Speed
Del.quantity cm3/: 80.0...90.0
              1000H.: (77.0...93.0)
LOW IDLE
Speed 1/min: 300
Contr.-rod trav.mm: 7:80...7.90
Del.quantity cm3/: 10.0...14.0
              1000H.: (8.0...16.0)
              cm3/: 3.50
Dispersion
              1000H.: (5.50)
Remarks:
```

Cam sequence : 1- 3- 4- 2 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) : MB 5.7 A 20 : 02.06.87 Edition Superceeded Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 403 444 113 1st speed 1/mi: 1300 Contr.-rod trav.mm: 12.60...12.70 Injection pump Pump designation : PES4MW100/720RS1151 EP type number Del.quantity cm3/: 9.8...10.0 : 0 413 404 104 Governor Governor design. : RQV300...1300MW50-3 100H.: (9.6...10.2) Governer no. : 0 420 083 129 cm3/:0.3Dispersion Customer-spec. information 100H.: (0.6) Customer : DB : 0M 364 LA 2nd speed 1/min: 300.0 Engine Contr.-rod trav. m: 6.8...6.9 Del.quantity cm3/: 1.0...1.4 100H:: (0.7...1.6) Dispersion cm3/: 0.3 1st version kW : 100.0 Speed 1/min: 2600 100H.: (0.5) TEST BENCH REQUIREMENTS (B) Setting of injection pump with Calibrating-oil inlet temp. <sup>D</sup>C externally-mounted governor : 38...42 SLEEVE TRAVELS Overflow valve : 1 417 413 000 1st speed 1/min: 1340 Sleeve travel mm: 8.50...8.70 2nd speed 1/min: 1450
Sleeve travel mm: 9.50...9.90
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30 Inlet press., bar: 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly 4th speed 1/min: 300 Sleeve travel mm: 1.30...1.70 Opening pressure, bar : 172...175 SLEEVE POSITION Control-lever position Degree: -1 Test inj. tubing : 1 680 750 015 17min: 1340 Speed Cont.-rod travelmm: 15.20...17.80 Outside diameter x Wall thickness FULL-LOAD DELIV. AT FULL-LOAD STOP x Length mm : 6.00x1.50x600 1st version (A) Injection pump setting values Speed 1/min: 1300 Charge press. hPa: 700 Insp. values in parentheses Set constant delivery quant. Del.quantity cm3/: 98.0...100.0 per values 1000H.: (96.0...102.0) cm3/ : 3.50 START OF DELIVERY Dispersion 1000H.: (6.00) Test pressure, bar: 30...32 HIGHEST RATED SPEED Prestroke mm : 3.70...3.80 1st version : (3.65...3.85) Contr.-rod trav.mm: 9.00...12.00

**HO3** 

Control-lever position degrees: 49...57 Testing: 1st c-rod trav.mm : 11.60 Speed 1/min: 1340...1350 2nd c-rod trav.mm : 4.00 Speed 1/min : 1445...1475 4th speed 1/min: 1550 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 16...24 Setting point w/out aux. spring 1/min : 300 Contr.-rod trav.mm: 6.8 Testing: 1/min : 100 Speed C-rod trav.mm min : 8.40 1/min : 300 Speed : 6.80...6.90 C-rod trav.mm CONSTANT REGULATION 1/min: 320...550 Speed compensator (LDA\_ADA\_ALDA) 1st version Setting Speed 1/min : 500 Pressure hPa : 200 Contr.-rod trav.mm: 11.30...11.40 Measurement 1/min : 500 Speed 1st pressure hPa : 10.50...10.60 C-rod trav.mm : 335 2nd pressure hPa : 12.10...12.40 C-rod trav.mm : 700 3rd pressure hPa C-rod trav.mm : 12.60...12.70 SWITCH-OVER POINT Speed 1/min : 220 (250) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 1/min : 600 Speed Del.quantity cm3/: 82.5...85.5 1000H.: (80.0...88.5) cm3/: 5.00 1000H.: (7.00) Dispersion Charge press. hPa : -1/min : 500 Speed

H04

Del.quantity cm3/: 49.0...51.0 1000H.: (47.0...53.0)

STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 85.0...95.0 1000H.: (82.0...98.0)

LOW IDLE

Speed 1/min: 300 Contr.-rod trav.mm: 6.80...6.90 Del.quantity cm3/: 10.0...14.0 1000H.: (7.5...16.5)

Dispersion cm3/: 3.50 1000H.: (5.50)

Note inst. in remarks column

Test sheet Edition : MB 5.7 A 12 : 02.06.87

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 403 446 124

Injection pump

Pump designation : PES6MW100/720RS1101

EP type number : 0 413 406 102

Governor

Governor design. : RQV300/1300MW34 Governer no. : 0 420 083 032

Customer-spec. information

Customer : DB

: 0M362LA Engine

1st version kW : 141.0 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.20...3.30

: (3.15...3.35)

: 1-5-3-6-2-4 Cam sequence Setting point w/out aux. spring Speed 1/min : 300 Contr.-rod trav.mm: 6.0 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Testing: 1/min : 100 Speed C-rod trav.mm min: 7.60 1/min : 300 BASIC SETTING Speed C-rod trav.mm : 6.00...6.10 : 2.00 1st speed 1/mi: 1300 C-rod trav.mm 1/min : 460...520 Speed Contr.-rod trav.mm: 11.90...12.00 compensator (LDA, ADA, ALDA) Del.quantity cm3/: 9.4...9.6 100H.: (9.2...9.8) 1st version Setting Dispersion 1/min: 500 cm3/:0.3Speed Pressure hPa : -100H.: (0.6) Contr.-rod trav.mm: 10.20...10.30 2nd speed 1/min: 300.0 Measurement Contr.-rod trav. m: 6.0...6.1
Del.quantity cm3/: 1.0...1.4
100H: (0.8...1.7)
Dispersion cm3/: 0.3
100H: (0.5) 1/min : 500 Speed 1st pressure hPa : 100 C-rod trav.mm : 0.40...0,50 2nd pressure hPa : 125 : 0.90...1.10 C-rod trav.mm 3rd pressure hPa : 700 SLEEVE POSITION : 11.90...12.00 Control-lever position C-rod trav.mm Degree: -1 1/min: 1300 SWITCH-OVER POINT Speed Cont.-rod travelmm: 15.20...17.80 1/min : 230 (250) Speed FULL-LOAD DELIV. AT FULL-LOAD STOP FUEL-DELIVERY CHARACTERISTICS 1st version 1st version Speed 1/min: 1300 Charge press. hPa: 700 Del.quantity cm3/: 94.5...96.5 1000H: (92.5...98.5) Dispersion cm3/: 3.50 Charge press. hPa : 700 1/min : 800 Speed Speed 1/min : 000 Del.quantity cm3/: 92.0...96.0 1000H.: (90.0...98.0) Dispersion cm3/: 5.00 1000H.: (7.00) 1000H.: (6.00) Charge press. hPa : -Speed 1/min: 500
Del.quantity cm3/: 54.5...56.5
1000H.: (52.5...58.5)
Dispersion cm3/: 3.50
1000H.: 6.00 HIGHEST RATED SPEED 1st version Control-lever position degrees: 57...65 Testing: 1st c-rod trav.mm : 10.90 1/min : 1340...1350 STARTING FUEL DELIVERY Speed 2nd c-rod trav.mm : 4.00 1/min : 1460...1490 Speed 1/min : 1600 Speed 1/min : 100 4th speed Del.quantity cm3/: 80.0...90.0 1000H.: (77.0...93.0) : 0.10...1.00 C-rod trav.mm LOWEST RATED SPEED I LOW IDLE Control-lever position degrees: 16...24

**H06** 

Speed 1/min: 300 Contr.-rod trav.mm: 6.00...6.10 Del.quantity cm3/: 10.5...14.5 1000H.: (8.0...17.0) Dispersion cm3/: 3.50 1000H.: (5.50)

Note inst. in remarks column

Test sheet Edition : MB 5,7 A 11 : 02.06.87 Superceeded

Calibrating oil : ISO-4113

: 0 403 446 134 Combination no.

Injection pump

Pump designation : PES6MW100/720RS1101

EP type number : 0 413 406 102

Governor

Governor design. : RQV300/1300MW44 Governer no. : 0 420 083 053

Customer-spec. information Customer

: 0M362LA Engine

1st version kW : 141.0 1/min: 2600 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Cverflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nezzle-holder

: 0 681 343 009 assembly `

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00X2.00X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY Test pressure, bar: 30...32

: 3.20...3.30 Prestroke mm : (3.15...3.35)

```
Cam sequence
                    : 1-5-3-6-2-4
                                                         Setting point w/out aux. spring
                                                         Speed 1/min: 300
                                                         Contr.-rod trav.mm: 6.0
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                         Testing:
                                                         Speed 1/min: 100
C-rod trav.mm min: 7.60
BASIC SETTING
                                                                      1/min : 300
                                                         Speed
                                                         C-rod trav.mm : 6.00...6.10
                                                                             : 2.00
                                                         C-rod trav.mm
            1/mi: 1300
1st speed
                                                                      1/min: 520...580
                                                         Speed
Contr.-rod trav.mm: 11.90...12.00
                                                          compensator (LDA,ADA,ALDA)
Del.quantity cm3/ : 9.4...9.6
               100H.: (9.2...9.8)
                                                         1st version
                                                         Setting
Dispersion
               cm3/:0.3
                                                                       1/min : 500
                                                         Speed
                                                         Pressure
                                                                      hPa : -
               100H.: (0.6)
                                                         Contr.-rod trav.mm: 10.00...10.10
2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.0...6.1

Del.quantity cm3/: 1.0...1.4

100H.: (0.8...1.7)

Dispersion cm3/: 0.3

100H.: (0.5)
                                                         Measurement
                                                                       1/min : 500
                                                         Speed
                                                         1st pressure hPa : 100
                                                           C-rod trav.mm
                                                                              : 0.40...0.50
                                                         2nd pressure hPa : 125
                                                           C-rod trav.mm : 0.90...1.10
SLEEVE POSITION
                                                         3rd pressure hPa : 700
                                                           C-rod travamm
                                                                             : 11.90...12.00
Control-lever position
              Degree: -1
1/min: 1330
Speed
                                                         SWITCH-OVER POINT
Cont.-rod travelmm: 15.20...17.80
                                                                       1/min : 230 (250)
                                                         Speed
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                         FUEL-DELIVERY CHARACTERISTICS
1st version
                                                         1st version
Speed 1/min: 1300
Charge press. hPa: 700
                                                        Charge press. hPa : 700
Speed 1/min : 800
                                                        Del.quantity cm3/: 92.0...96.0
1000H:: (90.0...98.0)
Del.quantity cm3/: 94.5...96.5
             1000H.: (92.5...98.5)
cm3/: 3.50
                                                                       cm3/:5.00
                                                         Dispersion
Dispersion
                                                                       1000Ha: (7.00)
              1000H.: (6.00)
                                                         Charge press. hPa : -
                                                        Speed 1/min: 500
Del.quantity cm3/: 51.5...53.5
1000H.: (49.5...55.5)
Dispersion cm3/: 3.50
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 60...68
                                                                       1000H.: 6.00
Testing:
1st c-rod trav.mm : 10.90
            1/min: 1340...1350
                                                         STARTING FUEL DELIVERY
  Speed
2nd c-rod trav.mm : 4.00
  Speed
            1/min : 1435...1465
             1/min : 1600
                                                                      1/min : 100
4th speed
                                                         Speed
                                                         Del.quantity cm3/: 80.0...90.0
                     : 0.10...1.00
  C-rod trav.mm
                                                                       1000H.: (77.0...93.0)
LOWEST RATED SPEED I
                                                         LOW IDLE
Control-lever
 position degrees: 7...15
```

H09

Note inst. in remarks column

Test sheet Edition Superceeded : MB 8.7 0 : 02.06.87

Calibrating oil : ISO-4113

: 0 403 446 143 Combination no.

Injection pump

Pump designation : PES6MW100/720RS1101

EP type number : 0 413 406 102

Governor

Governor design. : RQV300/1300MW44-1 Governer no. : 0 420 083 064

Customer-spec. information Customer

: 0M362LA Engine

1st version kW : 141.0 1/min: 2600 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter x Wall thickness

🛪 🖟 🕾 gth mm -: 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 30...32

: 3.20...3.30 Prestroke mm : (3.15...3.35) Contr.-rod trav.mm: 9.00...12.00

```
Cam sequence : 1-5-3-6-2-4
                                                  Setting point w/out aux. spring
                                                  Speed 1/min: 300
                                                  Contr.-rod trav.mm: 6.0
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                  Testing:
                                                              1/min : 100
                                                  Speed
                                                  C-rod trav.mm min : 7.60
BASIC SETTING
                                                  Speed
                                                              1/min : 300
                                                  C-rod trav.mm
                                                                    : 6.00...6.10
            1/mi: 1300
                                                  C-rod trav.mm
                                                                     : 2.00
1st speed
                                                              1/min : 520...580
                                                  Speed
Contr.-rod trav.mm: 11.90...12.00
                                                   compensator (LDA,ADA,ALDA)
Del.quantity cm3/ : 9.4...9.6
             100H.: (9.2...9.8)
                                                  1st version
                                                  Setting
Dispersion
             cm3/:0.3
                                                              1/min : 500
                                                  Speed
                                                  Pressure
                                                              hPa : -
                                                  Contr.-rod trav.mm: 10.20...10.30
             100H.: (0.6)
2nd speed
             1/min: 300.0
                                                  Measurement
                                                              1/min : 500
Contr.-rod trav. m: 6.0...6.1
                                                  Speed
Del.quantity cm3/: 1.0...1.4
100H.: (0.8...1.7)
                                                  1st pressure hPa : 100
             cm3/: 0.3
100H.: (0.5)
                                                    C-rod trav.mm : 0.40...0.50
Dispersion
                                                  2nd pressure hPa : 125
                                                                    : 0.90...1.10
                                                    C-rod trav.mm
                                                  3rd pressure hPa : 700
SLEEVE POSITION
                                                    C-rod trav.mm : 11.90...12.00
Control-lever position
            Degree: -1
             17min: 1330
                                                  SWITCH-OVER POINT
Speed
                                                  Speed
                                                              1/min : 230 (250)
Cont.-rod travelmm: 15.20...17.80
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                  FUEL-DELIVERY CHARACTERISTICS
1st version
                                                  1st version
Speed
                                                  Charge press. hPa: 700
             1/min: 1300
Charge press. hPa : 700
                                                              1/min : 800
                                                  Speed
Del.quantity cm3/: 94.5...96.5
                                                  Del.quantity cm3/ : 92,0...96.0
                                                              1000H.: (90.0...98.0)
            1000H.: (92.5...98.5)
            cm3/ : 3.50
                                                               cm3/: 5.00
Dispersion
                                                  Dispersion
                                                              1000H.: (7.00)
            1000H.: (6.00)
                                                  Charge press. hPa : -
                                                  Speed 1/min: 500 | Del.quantity cm3/: 54.5...56.5
HIGHEST RATED SPEED
1st version
                                                              1000H.: (52.5...58.5)
Control-lever
                                                               cm3/: 3.50
 position degrees: 60...68
                                                  Dispersion
                                                              1000H.: 6.00
Testing:
1st c-rod trav.mm : 10.90
  Speed 1/min: 1340...1350
                                                  STARTING FUEL DELIVERY
                                                                              ==
2nd c-rod trav.mm : 4.00
           1/min : 1435...1465
  Speed
4th speed 1/min : 1600
                                                  Speed
                                                              1/min : 100
                  : 0.10...1.00
  C-rod trav.mm
                                                  Del.quantity cm3/: 80.0...90.0
                                                              1000H.: (77.0...93.0)
LOWEST RATED SPEED I
                                                  LOW IDLE
Control-lever
 position degrees: 7...15
H12
```

Speed 1/min: 300 Contr.-rod trav.mm: 6.00...6.10 Del.quantity cm3/: 10.5...14.5 1000H.: (8.0...17.0) Dispersion cm3/: 3.50 1000H.: (5.50)

Remarks:

Set intermediate-speed stop (ZDA) to contact at 1300 1/min, then turn back 1/2 turn.

```
Cam sequence : 1-5-3-6-2-
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : MB 6,0 D 9 : 03.04.87
Edition
Superceeded
                    : 4.86
Calibrating oil
                   : ISO-4113
                                                       BASIC SETTING
Combination no.
                    : 0 403 446 158
                                                                  1/mi: 1300
                                                       1st speed
                                                       Contr.-rod trav.mm: 12.10...12.20
Injection pump
Pump designation : PES6MW100/720RS1131
                    : 0 413 406 123
                                                       Del.quantity cm3/: 9.65...10.25
EP type number
Governor
                                                                     100H.: (9.85...10.45)
Governor design. : RQV300...1300MW50-1
                   : 0 420 083 089
Governer no.
                                                       Dispersion
                                                                     cm3/: 0.35
Customer-spec. information
Customer
                                                                     100H.: (0.6)
Engine
                    : OM 366 LA
                                                       2nd speed
                                                                     1/min: 300.0
                                                      Contr.-rod trav. m: 6.1...6.2

Del.quantity cm3/: 0.9...1.3

100H.: (0.65...1.55)

Dispersion cm3/: 0.35
1st version kW : 150.0
              1/min: 2600
Speed
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.5)
Calibrating-oil inlet temp. OC
                                                       SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                      Degree: -1
Speed 1/min: 1340
Cont.-rod travelmm: 15.20...17.80
Overflow valve
                    : 1 417 413 000
Inlet press., bar : 1.50
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                                                      1st version
                   : 0 681 343 009
 assembly
                                                       Speed
                                                                     1/min: 1300
                                                      Charge press. hPa: 700
Del.quantity cm3/: 96.5...102.5
1000H.: (98.5...104.5)
Dispersion cm3/: 3.50
Opening
 pressure, bar : 172...175
                                                                    1000H.: (6.00)
Test inj. tubing : 1 680 750 015
                                                      HIGHEST RATED SPEED
Outside diameter
                                                      1st version
x Wall thickness
                                                      Control-lever
                   : 6.00x1.50x600
                                                       position degrees: 48...56
x Length mm
                                                      Testing:
(A) Injection pump setting values
    Insp. values in parentheses
                                                      1st c-rod trav.mm : 11.10
    Set constant delivery quant.
                                                                 1/min : 1340...1350
                                                         Speed
    per values
                                                      2nd c-rod trav.mm : 4.00
                                                                    1/min : 1440...1470
                                                         Speed
                                                       4th speed 1/min : 1550
START OF DELIVERY
                                                         C-rod tray.mm : 0.00...1.00
Test pressure, bar: 30...32
Prestroke mm
                    : 3.70...3.80
                                                      LOWEST RATED SPEED I
                    : (3.65...3.85)
                                                      Control-lever
Contr.-rod trav.mm: 9.00...12.00
                                                       position degrees: 11...19
H14
```

```
Setting point w/out aux. spring
         1/min : 300
Speed
Contr.-rod trav.mm: 6.1
Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.60
             1/min : 300
Speed
C-rod trav.mm
                   : 6.10...6.20
CONSTANT REGULATION
             1/min: 350...550
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
             hPa : 170
Contr.-rod trav.mm: 10.80...10.90
Measurement
             1/min : 500
Speed
1st pressure hPa
                    : 10.50...10.60
  C-rod trav.mm
2nd pressure hPa
                    : 225
C-rod trav.mm : 11.70...12.00
3rd pressure hPa : 700
  C-rod trav.mm
                    : 12.10...12.20
SWITCH-OVER POINT
Speed
             1/min : 220 (250)
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
             1/min : 600
Speed
Del.quantity cm3/: 85.0...89.0
1000H.: (83.0...91.0)
             cm3/: 5.00
1000H.: (7.00)
Dispersion
Charge press. hPa : -
             1/min : 500
Speed
Del.quantity cm3/ : 54.0...56.0
             1000H.: (52.0...58.0)
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/ : 71.0...81.0
             1000H.: (68.0...84.0)
LOW IDLE
             1/min : 300
Speed
```

H15

Contr.-rod trav.mm: 6.10...6.20 Del.quantity cm3/: 9.00...13.0 1000H.: (6.5...15.5) Dispersion cm3/: 3.50

1000H.: (5.50)

Note inst. in remarks column

Test sheet

: 09.03.87 Edition

Superceeded

Calibrating oil : ISO-4113

: 0 403 446 166 Combination no.

Injection pump

Pump designation : PES6MW100/720RS1133

EP type number : 0 413 406 126

Governor

Governor design. : RQ325...1325MW65 Governer no. : 0 420 082 018

Customer-spec. information Customer : KHD

: BF 6L 913 BW Engine

1st version kW : 124.0 1/min: 2650 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 P68 134 3009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 014

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 30...32

: 3.50...3.60 Prestroke mm

: (3.45...3.65)

```
Cam sequence : 1-5-3-6-2-4
                                                           LOWEST RATED SPEED I
                                                           Control-lever
                                                            position degrees: 8...16
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)
                                                           Setting point w/out aux. spring
                                                                        1/min : 325
                                                           Speed
                                                           Contr.-rod trav.mm: 7.0
BASIC SETTING
                                                           Testing:
                                                                         1/min : 100
1st speed
              1/mi: 1325
                                                           Speed
                                                           C-rod tray.mm min : 8.60
                                                                         1/min : 325
nm : 7.00...7.10
Contr.-rod trav.mm: 11.00...11.10
                                                           Speed
                                                           C-rod trav.mm
Del.quantity ck: /: 10.1...10.3
                                                           CONSTANT REGULATION
                100H.: (9.9...10.5)
                                                                         1/min : 340...450
                                                           Speed
Dispersion
               cm3/:0.3
                                                            compensator (LDA_ADA_ALDA)
                100H.: (0.6)
                                                           1st version
2nd speed 1/min: 325.0

Contr.-rod trav. m: 7.0...7.1

Del.quantity cm3/: 1.1...1.5

100H.: (0.9...1.7)

Dispersion cm3/: 0.3

100H.: (0.5)
                                                           Setting
                                                                         1/min : 500
hPa : 700
                                                           Speed
                                                           Pressure
                                                           Contr.-rod trav.mm: 11.00...11.10
                                                           Measurement
                                                                         1/\min : 500
                                                           Speed
SLEEVE POSITION
Control-lever position
                                                           1st pressure hPa
              Degree: -2
1/min: 700
                                                                                : 9.50...9.60
                                                             C-rod trav.mm
                                                                                : 350
Speed
                                                           2nd pressure hPa
                                                             C-rod trav.mm : 10.10...10.40
Cont.-rod travelmm: 19.20...20.80
                                                           3rd pressure hPa : 450
FULL-LOAD DELIV. AT FULL-LOAD STOP
                                                             C-rod trav.mm
                                                                                : 10.70...10.80
1st version
                                                           FUEL-DELIVERY CHARACTERISTICS
Speed
                1/min: 1325
Charge press. hPa: 700
Del.quantity cm3/: 101.0...103.0
1000H.: (99.0...105.0)
Dispersion cm3/: 3.50
                                                           1st version
                                                           Charge press. hPa : 700
                                                                         1/min : 850
                                                           Speed
                                                           Del.quantity cm3/: 93.0...97.0
1000H.: (91.0...99.0)
              1000H.: (6.00)
                                                                         cm3/: 3.50
1000H.: (7.00)
                                                           Dispersion
HIGHEST RATED SPEED
                                                           Charge press. hPa : -
1st version
                                                           Speed 1/min: 500
Del.quantity cm3/: 57.0...59.0
1000H.: (55.0...61.0)
Control-lever
 position degrees: 26...34
Setting point:
            1/min : 700
Speed
Contr.-rod trav.mm: 20.0
                                                           STARTING FUEL DELIVERY
Testing:
1st c-rod trav.mm : 10.00
                                                           Speed
                                                                         1/min : 100
Speed 1/min: 1375...1385
2nd c-rod trav.mm: 4.00
                                                           Del.quantity cm3/: 120.0...140.0
1000H.: (117.0...143.0)
  Speed
             1/min : 1445...1475
              1/min : 1550
                                                          LOW IDLE
4th speed
  C-rod trav.mm : 0.10...1.00
H17
```

Remarks:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence
                                                                          : 1-5-3-6-2-4
Note inst. in remarks column
                                                       SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : MB 6,0 D 25
                    : 13.05.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                       BASIC SETTING
                    : 0 403 446 170
                                                                  1/mi: 1300
Combination no.
                                                       1st speed
Injection pump
                                                       Contr.-rod trav.mm: 11.00...11.10
Pump designation : PES6MW100/720RS1144
                    : 0 413 406 138
                                                       Del.guantity cm3/: 8.2...8.4
EP type number
Governor
                    : RQV300...1300MW69
Governor design.
                                                                     100H.: (8.0...8.6)
Governer no.
                    : 0 420 083 102
                                                       Dispersion
                                                                     cm3/:0.3
Customer-spec. information
                   : DB
                                                                     100H.: (0.6)
Customer
                                                      2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/: 1.0...1.4
100H.: (0.9...1.5)
                    : 0M366A
Engine
1st version kW : 125.0
              1/min: 2600
Speed
                                                                     cm3/:0.3
                                                       Dispersion
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.5)
Calibrating-oil inlet temp. °C
                                                       (B) Setting of injection pump with
                    : 38...42
                                                           externally-mounted governor
                                                       SLEEVE TRAVELS
Overflow valve
                    : 1 417 413 000
                                                       1st speed 1/min: 1340
                                                         Sleeve travel mm: 8.40...8.60
                                                       2nd speed 1/min: 1450
Inlet press., bar: 1.50
                                                         Sleeve travel mm: 8.70...9.10
                                                       3rd speed 1/min: 600
Calibrating nozzle-holder
                                                       Sleeve travel mm: 3.90...4.50
4th speed 1/min: 300
                   : 0 681 343 009
 assembly
                                                         Sleeve travel mm: 0.80...1.30
Opening
 pressure, bar : 172...175
                                                       SLEEVE POSITION
                                                       Control-lever position
                                                                    Degree: -1
1/min: 1350
Test inj. tubing : 1 680 750 008
                                                       Speed
                                                       Cont.-rod travelmm: 15.20...17.80
Outside diameter
x Wall thickness
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 6.00x2.00x600
x Length mm
(A) Injection pump setting values
                                                       1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                       Speed
                                                                     1/min: 1300
                                                      Del.quantity cm3/: 82.0...84.0
1000H.: (80.0...86.0)
Dispersion cm3/: 3.50
1000H.: (6.00)
    per values
START OF DELIVERY
Test pressure, bar: 30...32
                                                      HIGHEST RATED SPEED
                    : 3.70...3.80
Prestroke mm
                                                       1st version
                    : (3.65...3.85)
                                                      Control-lever
Contr.-rod tray.mm: 9.00...12.00
                                                       position degrees: 50...58
H19
```

Testing: 1st c-rod trav.mm : 10.00 Speed 1/min: 1340...1350 2nd c-rod trav.mm : 4.00 1/min: 1425...1455 Speed 4th speed 1/min: 1550 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 18...26 Setting point w/out aux. spring 1/min : 300 Contr.-rod trav.mm: 7.8 Testing: 1/min : 100 Speed C-rod trav.mm min : 10.20 1/min : 300 mm : 7.80...7.90 Speed C-rod trav.mm CONSTANT REGULATION 1/min : 330...500 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1300 1st speed C-rod trav.mm : 11.00...11.10 1/min : 750 2nd speed C-rod trav.mm : 11.90...12.00 1/min : 700 3rd speed C-rod trav.mm : 12.00...12.20 4th speed 1/min: 1100 C-rod trav.mm : 11.00...11.20 SWITCH-OVER POINT 1/min : 230 (250) Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 750 Del.quantity cm3/ : 79.0...82.0 1000H.: (76.5...84.5) cm3/: 5.00 1000H.: (7.00) Dispersion STARTING FUEL DELIVERY Speed 1/min : 100 Del.quantity cm3/: 80.0...90.0 1000H.: (77.0...93.0) Contr.-rod trav.mm: 19.00...21.00 LOW IDLE

1/min : 300 Contr.-rod trav.mm: 7.80...7.90

Speed

H20

Del.quantity cm3/: 10.0...14.0 1000H.: (9.0...15.0) Dispersion cm3/: 3.50 1000H.: (5.00)

Note inst. in remarks column

Test sheet : MB 6,0 D 20 : 10.04.87

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 403 446 177

Injection pump

Pump designation : PES6MW100/720RS1139

EP type number : 0 413 406 134

Governor

Governor design. : RQV300...1300MW48

Governer no. : 0 420 083 066

Customer-spec. information Customer

Engine : 0M366A

1st version kW : 125.0 1/min: 2600 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 30...32

: 3.70...3.80 Prestroke mm : (3.65...3.85)

```
Cam sequence
                    : 1-5-3-6-2-4
                                                        Testing:
                                                        1st c-rod trav.mm : 10.00
                                                          Speed 1/min: 1340...1350
SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                                                        2nd c-rod trav.mm : 4.00
                                                                     1/min : 1425...1455
1/min : 1550
                                                          Speed
                                                        4th speed
BASIC SETTING
                                                          C-rod trav.mm : 0.00...1.00
            1/mi: 1300
                                                        LOWEST RATED SPEED I
1st speed
                                                        Control-lever
Contr.-rod trav.mm: 11.00...11.10
                                                         position degrees: 18...26
                                                       Setting point w/out aux. spring
                                                       Speed 1/min: 300
Contr.-rod trav.mm: 7.85
Del.quantity cm3/: 8.2...8.4
               100H.: (8.0...8.6)
                                                        Testing:
Dispersion
               cm3/: 0.35
                                                                     1/min : 100
                                                        Speed
                                                        C-rod trav.mm min: 8.70
               100H.: (0.6)
                                                        Speed
                                                                    1/min : 300
                                                        C-rod trav.mm
                                                                            : 7.80...7.90
2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/: 1.0...1.4
100H.: (0.9...1.5)
                                                        CONSTANT REGULATION
                                                                     1/min : 330...500
                                                       Speed
              cm3/:0.35
Dispersion
                                                        TORQUE CONTROL
               100H.: (0.5)
                                                        Torque-control curve - 1st version
                                                                     1/min : 1300
                                                        1st speed
                                                          C-rod trav.mm : 11.00...11.10
(B) Setting of injection pump with
    externally-mounted governor
                                                                     1/min : 800
                                                       2nd speed
                                                          C-rod trav.mm : 11.80...12.00 d speed 1/min : 585
SLEEVE TRAVELS
                                                        3rd speed
1st speed 1/min: 1340
                                                          C-rod trav.mm : 12.00...12.20
                                                        4th speed 1/min: 1100
  Sleeve travel mm: 8.50...8.70
2nd speed 1/min: 1450
                                                                            : 11.00...11.10
                                                          C-rod trav.mm
  Sleeve travel mm: 9.30...9.70
                                                       SWITCH-OVER POINT
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300
                                                                     1/min : 230 (250)
                                                       Speed
                                                       FUEL-DELIVERY CHARACTERISTICS
  Sleeve travel mm: 1.20...1.70
                                                                     1/min : 800
                                                       Speed
                                                       Del.quantity cm3/: 81.0...83.0
SLEEVE POSITION
                                                                     1000H.: (79.0...85.0)
Control-lever position
                                                                      cm3/:5.00
             Degree: -1
                                                       Dispersion
                                                       1000H.: (7.00)

Speed 1/min: 585

Del.quantity cm3/: 77.5...80.5

1000H.: (75.0...83.0)
              17min: 1350
Speed
Cont.-rod travelmm: 15.20...17.80
FULL-LOAD DELIV. AT FULL-LOAD STOP
1st version
Speed
               1/min: 1300
                                                       STARTING FUEL DELIVERY
Del.quantity cm3/: 82.0...84.0
             1000H.: (80.0...86.0)
cm3/: 3.50
                                                       Speed 1/min: 100
Del.quantity cm3/: 80.0...90.0
1000H.: (77.0...93.0)
Dispersion
             1000H.: (6.00)
HIGHEST RATED SPEED
                                                       LOW IDLE
1st version
Control-lever
                                                                     1/min : 300
 position degrees: 50...58
                                                       Speed
H22
```

Note inst. in remarks column

Test sheet : MB 6.0 D 26 : 13.05.87 Edition

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 403 446 177

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0 413 406 138

Governor

Governor design. : RQV300...1300MW48

Governer no. : 0 420 083 066

Customer-spec. information Customer : DB

Engine : 0M366A

1st version kW : 125.0 1/min: 2600 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 30...32

: 3.70...3.80 Prestroke mm

: (3.65...3.85)

Cam sequence : 1-5-3-6-2-4 Testing: 1st c-rod trav.mm : 10.00 1/min: 1340...1350 Speed SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) 2nd c-rod trav.mm : 4.00 1/min : 1425...1455 Speed 4th speed 1/min: 1550 BASIC SETTING C-rod tray.mm : 0.00...1.00 1/mi: 1300 LOWEST RATED SPEED I 1st speed Control-lever Contr.-rod tray.mm: 11.00...11.10 position degrees: 18...26 Setting point w/out aux. spring Del.quantity cm3/: 8.2...8.4 1/min : 300 Contr.-rod trav.mm: 7.8 100H.: (8.0...8.6) Testing: Dispersion cm3/:0.31/min : 100 Speed C-rod trav.mm min : 8.70 Speed 1/min : 300 C-rod trav.mm : 7.80...7.90 100H.: (0.6) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.8...7.9 CONSTANT REGULATION Del.quantity cm3/: 1.0...1.4 100H.: (0.9...1.5) 1/min: 330...500 Speed cm3/: 0.3 100H.: (0.5) TORQUE CONTROL Dispersion Torque-control curve - 1st version 1st speed 1/min : 1300 C-rod trav.mm : 11.00...11.10 (B) Setting of injection pump with externally-mounted governor 2nd speed 1/min: 800 C-rod trav.mm : 11.80...12.00 SLEEVE TRAVELS 3rd speed 1/min: 585 1st speed 1/min: 1340 C-rod trav.mm : 12.00...12.20 Sleeve travel mm: 8.50...8.70 4th speed 1/min : 1100 2nd speed 1/min: 1450
Sleeve travel mm: 9.30...9.70
3rd speed 1/min: 500
Sleeve travel mm: 2.70...3.30
4th speed 1/min: 300 C-rod trav.mm : 11.00...11.10 SWITCH-OVER POINT 1/min : 230 (250) Speed Sleeve travel mm: 1.20...1.70 FUEL-DELIVERY CHARACTERISTICS 1/min : 800 Speed Del.quantity cm3/: 81.0...83.0 1000H.: (79.0...85.0) SLEEVE POSITION Control-lever position Dispersion cm3/: 5.00 1000H.: (7.00) Speed 1/min: 585 Del.quantity cm3/: 77.5...80.5 Degree: -1 Speed 1/min: 1350 Cont.-rod travelmm: 15,20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1000H.: (75.0...83.0) 1st version 1/min: 1300 STARTING FUEL DELIVERY Speed Del.quantity cm3/: 82.0...84.0 1000H.: (80.0...86.0) Dispersion cm3/: 3.50 Speed 1/min: 100 Del.quantity cm3/: 80.0...90.0 1000H:: (77.0...93.0) 1000H.: (6.00) Contr.-rod trav.mm: 19.00...21.00 HIGHEST RATED SPEED 1st version LOW IDLE Control-lever position degrees: 30...58 H25

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 27 : 13.05.87 Edition

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 403 446 179

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0 413 406 138

Governor

Governor design. : RQV300...1300MW74

Governer no. : 0 420 083 112

Customer-spec. information Customer : DB

: 0M366LA Engine

1st version kW : 127.0 Speed 1/min: 2600

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 30...32

: 3.70...3.80 Prestroke mm

: (3.65...3.85)

Coritr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-2-4 Testing: 1st c-rod trav.mm : 10.00 Speed 1/min : 1340...1350 2nd c-rod trav.mm : 4.00 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Speed 1/min: 1425...1455 4th speed 1/min: 1550 BASIC SETTING C-rod trav.mm : 0.00...1.00 1st speed 1/mi: 1300 LOWEST RATED SPEED I Control-lever position degrees: 18...26 Contr.-rod trav.mm: 11.00...11.10 Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 7.8 Del.quantity cm3/ : 7.6...7.8 1008.: (7.4...8.0) Testing: cm3/:0.31/min : 100 Dispersion Speed C-rod trav.mm min: 9.70 100H.: (0.6) 1/min : 300 Speed C-rod trav.mm : 7.80...7.90 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.8...7.9 Del.quantity cm3/: 1.0...1.4 100H.: (0.9...1.5) Dispersion cm3/: 0.3 CONSTANT REGULATION 1/min : 330...600 Speed TORQUE CONTROL 100H.: (0.5) Torque-control curve - 1st version 1/min : 1300 1st speed C-rod trav.mm : 11.00...11.10 (B) Setting of injection pump with 2nd speed 1/min: 750 externally-mounted governor C-rod trav.mm : 11.70...11.80 3rd speed 1/min: 1125 C-rod trav.mm: 11.40...11.50 SLEEVE TRAVELS 1st speed 1/min: 1340 Sleeve travel mm: 8.50...8.70 2nd speed 1/min: 1450 SWITCH-OVER POINT Sleeve travel mm: 9.50...9.70 1/min : 230 (250) Speed 3rd speed 1/min: 700 Sleeve travel mm: 3.90...4.50 4th speed 1/min: 300 FUEL-DELIVERY CHARACTERISTICS 1/min : 750 Speed Del.quantity cm3/: 68.0...70.0 1000H:: (65.0...73.0) Dispersion cm3/: 5.00 Sleeve travel mm: 1.30...1.70 SLEEVE POSITION 1000H.: (7.00) Control-lever position Degree: -1 17min: 1335 Speed Cont.-rod travelmm: 15.20...17.80 STARTING FUEL DELIVERY FULL-LOAD DELIV. AT FULL-LOAD STOP 1/min : 100 Speed Del.quantity cm3/: 80.0...90.0 1000H.: (77.0...93.0) Contr.-rod trav.mm: 19.00...21.00 1st version 1/min: 1300 Speed Del.quantity cm3/ : 81.0...83.0 1000H.: (79.0...85.0) Dispersion cm3/ : 3.50LOW IDLE 1000H.: (6.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 50...58

**H28** 

Dispersion cm3/: 3.50 1000H.: (5.00)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 6,0 D 34 : 10.04.87 Edition

Superceeded

Calibrating oil : ISO-4113

: 0 403 446 184 Combination no.

Injection pump

Pump designation : PES6MW100/720RS1144

EP type number : 0 413 406 138

Governor

Governor design. : RQV300...1300MW48-3 Governer no. : 0 420 083 121

Customer-spec. information Customer

: 0M366A Engine

1st version kW : 125.0 1/min: 2600 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 30...32

: 3.70...3.80 Prestroke mm : (3.65...3.85)

Contr.-rod trav.mm: 19.00...21.00

Cam sequence Testing: 1st c-rod trav.mm : 9.90 Speed 1/min : 1340...1350 2nd c-rod trav.mm : 4,00 SD ang. spacing  $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + -  $^{\circ}$ : 0.50 (0.75) 1/min : 1425...1455 1/min : 1550 Speed 4th speed BASIC SETTING C-rod trav.mm : 0.00...1.00 1/mi: 1300 LOWEST RATED SPEED I 1st speed Control-lever Contr.-rod trav.mm: 10.90...11.00 position degrees: 18...26 Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 7.8 Del.quantity cm3/ : 8.0...8.2 100H.: (7.8...8.4) Testing: Dispersion cm3/: 0.351/min : 100 Speed C-rod trav.mm min: 9.30 100H.: (0.6) 1/min : 300 Speed C-rod trav.mm : 7.80...7.90 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.8...7.9 Del.quantity cm3/: 1.0...1.4 100H.: (0.9...1.5) CONSTANT REGULATION 1/min : 330...500 Speed cm3/: 0.35Dispersion TORQUE CONTROL 100H.: (0.5) Torque-control curve - 1st version 1/min : 1300 1st speed G-rod trav.mm : 10.90...11.00 (B) Setting of injection pump with 1/min : 800 externally-mounted governor 2nd speed C-rod trav.mm : 11.60...11.80 3rd speed 1/min: 585 SLEEVE TRAVELS C-rod trav.mm : 11.80...12.00 1st speed 1/min: 1340 Sleeve travel mm: 8.50...8.70 1/min: 1450 SWITCH-OVER POINT 2nd speed Sleeve travel mm: 9.30...9.70 1/min : 230 (250) Speed 3rd speed 1/min: 500 Sleeve travel mm: 2.70...3.30 FUEL-DELIVERY CHARACTERISTICS 4th speed 1/min: 300 1/min : 800 Speed Del.quantity cm3/: 77.5...79.5 1000H.: (75.5...81.5) Dispersion cm3/: 5.00 1000H.: (7.00) Speed 1/min: 585 Sleeve travel mm: 1.20...1.70 SLEEVE POSITION Control-lever position Degree: -1 17min: 1350 Del.quantity cm3/: 74.5...77.5 Speed 1000H.: (72.0...80.0) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP STARTING FUEL DELIVERY 1st version 1/min: 1300 Speed Del.quantity cm3/: 80.0...82.0 1/min : 100 Del.quantity cm3/: 80.0...90.0 1000H.: (77.0...93.0) 1000H.: (78.0...84.0) cm3/ : 3.50 1000H.: (6.00) Dispersion Contr.-rod trav.mm: 19.00...21.00 LOW IDLE HIGHEST RATED SPEED 1st version Speed 1/min: 300 Contr.-rod trav.mm: 7.80...7.90 Control-lever position degrees: 50...58 J03

: 1-5-3-6-2-4

Del.quantity cm3/: 10.0...14.0 1000H.: (9.0...15.0) Dispersion cm3/: 3.50 1000H.: (5.00)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Test sheet : CUM 8,3 A 2 : 17.12.86

Superceeded

Calibrating oil : ISO-4113

Note inst. in remarks column

: 0 403 466 103 Combination no.

Injection pump

Pump designation : PES6MW100/120RS1137 EP type number : 0 413 406 131

Governor

Governor design. : RSV425...1100MW2A319 -2

Governer no. : 0 420 085 062

Customer-spec. information Customer : CUMMINS/US

: 6 CTA-8.3 L Engine

1st version kW : 188.0 1/min: 2200 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 017

Opening

pressure, bar : 207...210

Test inj. tubing : 1 680 750 008

Outside diameter x Wall thickness

: 6.00X2.00X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60

: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1st speed 1/mi: 1100 Contr.-rod trav.mm: 14.10...14.20 Del.quantity cm3/: 14.2...14.4 100H.: (14.0...14.6) Dispersion cm3/:0.3100H.: (0.6) 2nd speed 1/min: 425.0 Contr.-rod trav. m: 7.8...7.9 Del.quantity cm3/: 1.9...2.3 100H.: (1.6...2.5) Dispersion cm3/: 0.3 100H.: (0.5) SLEEVE POSITION Control-lever position Degree: -3 1/min: 800 Speed Cont.-rod travelmm: 0.30...1.00 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1100 Speed Del.quantity cm3/: 142.0...144.0 1000H.: (140.0...146.0) Dispersion cm3/: 3.50 1000H.: (6.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 42...50 Testing: 1st c-rod trav.mm : 13.10 Speed 1/min : 1140...1150 2nd c-rod trav.mm : 4.00 1/min : 1215...1245 Speed 4th speed 1/min: 1300 C-rod trav.mm : 0.30...1.70 LOWEST RATED SPEED I

Control-lever position degrees: 18...26 Setting point w/out aux. spring Speed 1/min: 425 Contr.-rod trav.mm: 7.8 Testing: 1/min : 100 Speed C-rod trav.mm min: 19.00 Speed 1/min: 425 C-rod trav.mm: 7.80...7.90 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod trav.mm : 14.10...14.20 2nd speed 1/min : 750 C-rod trav.mm : 14.80...14.90 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 750
Del.quantity cm3/: 148.5...150.5
1000H.: (146.5...152.5)
Dispersion cm3/: 5.00 1000H.: (7.00) STARTING FUEL DELIVERY

LOW IDLE

Speed 1/min: 425 Contr.-rod trav.mm: 7.80...7.90 Del.quantity cm3/: 19.0...23.0 1000H.: (16.5...25.5) Dispersion cm3/: 3.50 1000H.: (5.50)

Remarks: Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1 Starting/full-load transition speed from holding magnet = 500 1/min.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
                    : CUM 8.3 A 3 : 09.03.87
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition
Superceeded
Calibrating oil : ISO-4113
                                                      SD mark cyl. no. : 1
                    : 0 403 466 104
Combination no.
                                                      BASIC SETTING
Injection pump
Pump designation : PES6MW100/120RS1137
                                                                    1/mi: 1050
                                                      1st speed
EP type number
                    : 0 413 406 131
                                                      Contr.-rod trav.mm: 12.10...12.20
Governor
                   : RSV400...1050MW2A319
Governor design.
                                                      Del.quantity cm3/: 12.4...12.6
                     -3
                   : 0 420 085 074
Governer no.
                                                                     100H.: (12.2...12.8)
Customer-spec. information
Customer
                   : CUMMINS/US
                                                      Dispersion
                                                                    cm3/: 0.35
                    : 6 CTA-8.3 L
Engine
                                                                     100H.: (0.6)
                                                      2nd speed 1/min: 400.0
Contr.-rod trav. m: 6.9...7.0
1st version kW : 165.0
              1/min: 2100
Speed
                                                      De! .quantity cm3/: 1.6...2.0
TEST BENCH REQUIREMENTS
                                                                     100H.: (1.3...2.2)
                                                                    cm3/: 0.35
100H.: (0.5)
                                                      Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                      SLEEVE POSITION
Overflow valve
                                                      Control-lever position
                    : 1 417 413 047
                                                                   Degree: -3
1/min: 800
                                                      Cont.-rod travelnm: 0.30...1.00
Inlet press., bar : 1.50
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
             : 1 688 901 017
 assembly
                                                      1st version
                                                                    1/min: 1050
Opening
                                                      Speed
                                                      Del.quantity cm3/: 124.0...126.0
1000H.: (122.0...128.0)
Dispersion cm3/: 3.50
pressure, bar
                   : 207...210
Test inj. tubing : 1 680 750 008
                                                                   1000H.: (6.00)
                                                      HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                      1st version
                    : 6.00x2.00x600
                                                      Control-lever
x Length mm
                                                       position degrees: 40...48
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
                                                      1st c-rod trav.mm : 11.10
                                                      Speed 1/min: 1090...1100
2nd c-rod trav.mm: 4.00
    per values
                                                        Speed 1/min: 1150...1180
th speed 1/min: 1250
START OF DELIVERY
Test pressure, bar: 30...32
                                                      4th speed
                                                        C-rod trav.mm : 0.30...1.70
Prestroke mm
                   : 3.50...3.60
                    : (3.45...3.65)
                                                      LOWEST RATED SPEED I
```

Control-lever position degrees: 19...27 Setting point w/out aux. spring Speed 1/min : 400 Contr.-rod trav.mm: 6.95 Testing: 1/min: 100 Speed C-rod trav.mm min: 19.00 Speed 1/min : 400 C-rod tray.mm : 6.90...7.00 SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 4.00 TORQUE CONTROL Torque-control curve - 1st version 1/min : 1050 1st speed C-rod trav.mm : 12.10...12.20 2nd speed 1/min: 750 C-rod trav.mm : 14.20...14.30 FUEL-DELIVERY CHARACTERISTICS 1/min : 750 Speed Del.quantity cm3/: 151.0...153.0 1000H.: (149.0...155.0) Dispersion cm3/: 5.00 1000H.: (7.00) STARTING FUEL DELIVERY 1/min : 100 Speed Del.quantity cm3/: 125.0...145.0 1000H.: (122.0...148.0) Contr.-rod trav.mm: 19.00...21.00 LOW IDLE 1/min : 400 Speed Contr.-rod trav.mm: 6.90...7.00 Del.quantity cm3/: 16.0...20.0 1009H.: (13.5...22.5) cm3/: 3.50 1000H.: (5.50) Dispersion Remarks: Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1 Starting/full-load transition speed from holding magnet = 500 1/min.

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                    : CUM 8,3 A 4
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : 13.05.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                       SD mark cyl. no. : 1
                    : 0 403 466 105
Combination no.
                                                       BASIC SETTING
Injection pump
Pump designation : PES6MW100/120RS1137
                                                       1st speed
                                                                    1/mi: 1100
EP type number
                    : 0 413 406 131
                                                       Contr.-rod trav.mm: 12.60...12.70
Governor
                    : RSV400...1100MW2A319
Governor design.
                                                       Del.quantity cm3/ : 13.2...13.4
                      -4
                    : 0 420 085 080
Governer no.
                                                                     100H.: (13.0...13.6)
Customer-spec. information
                                                                     cm3/:0.3
Customer
                   : CUMMINS/US
                                                       Dispersion
                    : 6 CTA-8.3 L
                                                                     100H.: (0.6)
Engine
                                                                     1/min: 400.0
1st version kW : 171.5
                                                       2nd speed
                                                       Contr.-rod trav. m: 7.0...7.1
Speed
              1/min: 2200
                                                       Del.quantity cm3/: 1.6...2.0
100H:: (1.3...2.2)
Dispersion cm3/: 0.3
100H:: (0.5)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                    : 38...42
                                                       SLEEVE POSITION
Overflow valve
                                                       Control-lever position
                    : 1 417 413 047
                                                                    Degree: -3
                                                                     17min: 800
                                                       Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                   : 1 688 901 017
 assembly
                                                       1st version
Opening
                                                       Speed
                                                                     1/min: 1100
                                                      Del.quantity cm3/: 132.5...134.5
1000H.: (130.5...136.5)
Dispersion cm3/: 3.50
1000H.: (6.00)
 pressure, bar : 207...210
Test inj. tubing : 1 680 750 008
                                                       HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                       1st version
                    : 6.00x2.00x600
                                                       Control-lever
x Length mm
                                                        position degrees: 40...48
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       Testing:
                                                       1st c-rod trav.mm : 11.60
Speed 1/min : 1140...1150
    per values
                                                       2nd c-rod trav.mm : 4.00
                                                                   1/min : 1200...1230
                                                         Speed.
START OF DELIVERY
                                                                  1/\sin : 1300
                                                       4th speed
Test pressure, bar: 30...32
                                                                          : 0.30...1.70
                                                         C-rod trav.mm
Prestroke mm
                 : 3.50...3.60
                    : (3.45...3.65)
                                                      LOWEST RATED SPEED I
```

```
Control-lever
 position degrees: 16...24
Setting point w/out aux. spring
             1/min : 400
Contr.-rod trav.mm: 7.0
Testing:
              1/min : 100
Speed
C-rod trav.mm min: 19.00
              1/min : 400
nm : 7.00...7.10
Speed
C-rod trav.mm
SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 4.00
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1100
C-rod trav.mm : 12.60...12.70
2nd speed 1/min : 750
  C-rod trav.mm : 13.70...13.80
FUEL-DELIVERY CHARACTERISTICS
              1/min : 750
Speed
Del.quantity cm3/: 141.0...143.0
1000H.: (139.0...145.0)
Dispersion cm3/: 5.00
1000H.: (7.00)
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 125.0...145.0
1000H.: (122.0...148.0)
Contr.-rod trav.mm: 19.00...21.00
LOW IDLE
              1/min : 400
Speed
Contr.-rod trav.mm: 7.00...7.10
Del.quantity cm3/: 16.0...20.0
1000H.: (13.5...22.5)
Dispersion cm3/: 3.50
1000H.: (5.50)
Remarks:
Start-of-delivery mark at 10° cam
rotation angle after start of delivery,
cylinder 1
Starting/full-load transition speed
from holding magnet = 500 1/min.
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                           : 1-5-3-6-2-4
                                                       Cam sequence
Note inst. in remarks column
                                                       SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : MB 5.7 A 18
: 13.05.87
Test sheet
Edition
Superceeded
                    : ISO-4113
                                                       BASIC SETTING
Calibrating oil
                    : 0 403 474 002
Combination no.
                                                       1st speed
                                                                      1/mi: 1200
Injection pump
                                                       Contr.-rod trav.mm: 11.70...11.80
Pump designation : PES4MW100/720R$1127
                    : 0 413 404 103
                                                       Del.quantity cm3/: 7.8...&.0
EP type number
Governor
Governor design.
                    : R$V350...1200MW0A322
: 0 420 085 075
                                                                      100H.: (7.6...8.2)
Governer no.
                                                       Dispersion
                                                                      cm3/:0.3
Customer-spec. information
Customer
                    : DB
                                                                      100H.: (0.6)
                                                                      1/min: 350.0
                    : 0M364A
Engine
                                                       2nd speed
                                                       Contr.-rod trav. m: 6.8...7.4
Del.quantity cm3/: 0.8...1.0
100H.: (0.6...1.4)
1st version kW
                  : 66.0
Speed
              1/min: 2400
                                                                      cm3/: 0.3
100H.: (0.5)
                                                       Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                       SLEEVE POSITION
                                                       Control-lever position
                    : 38...42
                                                                     Degree: -3
1/min: 800
Overflow valve
                                                       Speed
                    : 1 417 413 047
                                                       Cont.-rod travelmm: 0.30...1.00
                                                       FULL-LOAD DELIV, AT FULL-LOAD STOP
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                       1st version
                                                       Speed 1/min: 1200
Del.quantity cm3/: 78.0...80.0
1000H: (76.0...82.0)
Dispersion cm3/: 3.50
                   : 0 681 343 009
 assembly
Opening
pressure, bar : 172...175
                                                                     1000H.: (6.00)
                                                       HIGHEST RATED SPEED
Test inj. tubing : 1 680 750 008
                                                       1st version
                                                       Control-lever
Outside diameter
x Wall thickness
                                                        position degrees: 102...110
                   : 6.00x2.00x600
x Length mm
                                                       Testing:
                                                       1st c-rod trav.mm : 10.70
(A) Injection pump setting values
                                                                    1/min : 1240...1245
    Insp. values in parentheses
Set constant delivery quant.
                                                          Speed
                                                       2nd c-rod trav.mm : 4.00
    per values
                                                                    1/min : 1322...1335
                                                         Speed
                                                       3rd c-rod trav.mm : 4.00
                                                                    1/min : 1345...1375
1/min : 1450
START OF DELIVERY
                                                         Speed
Test pressure, bar: 30...32
                                                       4th speed
                                                                            : 0.30...1.70
                                                         C-rod trav.mm
                    : 3.70..,3.80
Prestroke mm
                                                       LOWEST RATED SPEED I
                    : (3.65...3.85)
Contr,-rod trav.mm: 9.00...12.00
                                                       Setting point w/out aux. spring
```

```
1/min : 350
Speed
Contr.-rod trav.mm: 7.1
Testing:
              1/min : 100
Speed
C-rod trav.mm min : 19.00
              1/min : 350
Speed
                    : 6.80...7.40
C-rod trav.mm
C-rod trav.mm
                     : 2.00
Speed
             1/min: 500...560
TORQUE CONTROL
Torque-control curve - 1st version
             1/min : 1200
1st speed
  C-rod trav.mm : 11.70...11.80
2nd speed 1/min: 600
                   : 12.60...12.80
  C-rod trav.mm
3rd speed 1/min: 700
  C-rod trav.mm : 12.60...12.80
4th speed 1/min: 950
  C-rod trav.mm : 12.20...12.40
FUEL-DELIVERY CHARACTERISTICS
              1/min : 600
Speed
Del.quantity cm3/: 68.0...70.0
1000H.: (66.0...72.0)
              cm3/: 5.00
1000H.: (7.00)
Dispersion
              1/min : 900
Speed
Del.quantity em3/: 77.0...79.0
1000H:: (75.0...81.0)
Dispersion cm3/: 5.00
1000H:: 7.00
STARTING FUEL DELIVERY
LOW IDLE
              1/min : 350
Speed
Contr.-rod trav.mm: 6.80...7.40
Del.quantity cm3/: 8.0...10.0
1000H.: (6.0...14.0)
Dispersion cm3/: 3.50
1000H.: (5.00)
Remarks:
```

```
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : MB 6,0 D 29
Test sheet
                   : 13.05.87
Edition
Superceeded
                  : ISO-4113
                                                    BASIC SETTING
Calibrating oil
Combination no.
                   : 0 403 476 027
                                                    1st speed
                                                               1/mi: 1300
Injection pump
                                                    Contr.-rod trav.mm: 10.70...10.80
Pump designation : PES6MW100/720RS1144
EP type number
                   : 0 413 406 138
                                                    Del.quantity cm3/: 8.0...8.2
Governor
Governor design: : RSV350...1300MW0A316
Governer no: : 0 420 085 047
                                                                  100H.: (7.8...8.4)
                                                                  cm3/:0.3
                                                    Dispersion
Customer-spec. information
                                                                  100H.: (0.6)
Customer
                   : DB
Engine
                   : 0M366A
                                                                  1/min: 350.0
                                                    2nd speed
                                                    Contr.-rod trav. m: 7.0...7.6
                                                    Del.quantity cm3/: 1.0...1.2
100H:: (0.8...1.4)
Dispersion cm3/: 0.3
100H:: (0.5)
1st version kW : 125.0
Speed
              1/min: 2600
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                    SLEEVE POSITION
                   : 38...42
                                                    Control-lever position
                                                                 Degree: -3
1/min: 800
Overflow valve
                                                    Speed
                                                    Cont.-rod travelmm: 0.30...1.00
                   : 1 417 413 000
Inlet press., bar: 1.50
                                                    Governor-spring reload
                                                    Notch setting x : 4.00
Calibrating nozzle-holder
                  : 0 681 343 009
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Qpening
                                                    1st version
pressure, bar : 172...175
                                                    Speed
                                                                  1/min: 1300
                                                    Del.quantity cm3/: 80.0...82.0
                                                                 1000H.: (78.0...84.0)
                                                    Dispersion cm3/ : 3.50
Test inj. tubing : 1 680 750 008
                                                                 1000H.: (6.00)
Outside diameter
x Wall thickness
                                                    HIGHEST RATED SPEED
                                                    1st version
                  : 6.00x2.00x600
x Length mm
                                                    Control-lever
                                                     position degrees: 54...61
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                    Testing:
    per values
                                                    1st c-rod trav.mm : 9.70
                                                               1/min : 1340...1345
                                                      Speed
                                                    2nd c-rod trav.mm: 4.00
START OF DELIVERY
                                                    Speed 1/min: 1380...1393
3rd c-rod trav.mm: 4.00
Test pressure, bar: 30...32
Prestroke mm
                   : 3.70...3.80
                                                      Speed
                                                                1/min : 1400...1430
                                                                 1/min : 1450
                   : (3.65...3.85)
                                                    4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                      C-rod trav.mm : 0.30...1.70
J13
```

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 12...20
-rod trav.mm : 2.00
C-rod trav.mm
Speed
              1/min : 445...505
SET IDLE AUXILIARY SPRING
Speed
              1/min : 350
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1300
  C-rod trav.mm : 10.70...10.80 d speed 1/min : 700
2nd speed
  C-rod trav.mm : 12.30...12.40
3rd speed 1/min: 825
  C-rod trav.mm : 11.90...12.10
FUEL-DELIVERY CHARACTERISTICS
Speed
               1/min : 700
Del.quantity cm3/: 80.0...82.0

1000H.: (78.0...84.0)

Dispersion cm3/: 5.00

1000H.: (7.00)

Speed 1/min: 825
Del.quantity cm3/: 80.5...82.5
               1000H.: (77.5...85.5)
STARTING FUEL DELIVERY
Speed
               1/min : 100
Del.quantity cm3/: 80.0...90.0
               1000H.: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00
LOW IDLE
Speed 1/min: 350
Contr.-rod trav.mm: 7.00...7.60
Del.quantity cm3/: 10.0...12.0
1000H.: (8.0...14.0)
               cm3/: 3.50
1000H.: (5.00)
Dispersion
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                   : MB 6.0 D 30
: 27.03.87
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : 11.85
Calibrating oil : ISO-4113
                                                      BASIC SETTING
Combination no.
                    : 0 403 476 029
                                                       1st speed
                                                                      1/mi: 1200
Injection pump
Pump designation : PES6MW100/720RS1124
                                                       Contr.-rod trav.mm: 9.80...9.90
EP type number
                    : 0 413 406 118
                                                      Del.quantity cm3/ : 7.6...7.8
Governor
Governor design. : RSV350...1200MW1A316
                                                                     100H.: (7.4...8.0)
                   : 0 420 085 048
Governer no.
                                                      Dispersion
                                                                     cm3/:0.3
Customer-spec. information
                                                                     100H.: (0.6)
Customer
                   : DB
                                                                     1/min: 350.0
Engine
                    : 0M366A
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.4...7.0
                                                      Del.quantity cm3/: 1.0...1.2
100H.: (0.8...1.4)
Dispersion cm3/: 0.3
100H.: (0.5)
1st version kW : 110.0
              1/min: 2400
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                       SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                    Degree: -3
1/min: 800
Overflow valve
                    : 1 417 413 000
                                                      Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
                                                      Governor-spring reload
                                                      Notch setting x : 4.00
Calibrating nozzle-holder
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
           : 0 681 343 009
Opening
                                                      1st version
                                                                     1/min: 1200
 pressure, bar : 172...175
                                                      Speed
                                                      Del.quantity cm3/: 76.0...78.0
1000H.: (74.0...80.0)
Dispersion cm3/: 3.50
1000H.: (6.00)
Test inj. tubing : 1 680 750 008
Outside diameter
                                                      HIGHEST RATED SPEED
x Wall thickness
                    : 6.00x2.00x600
x Length mm
                                                      1st version
                                                      Control-lever
                                                       position degrees: 52...60
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
    per values
                                                      1st c-rod trav.mm : 8.80
                                                         Speed 1/min: 1240...1245
                                                      2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                      Speed 1/min: 1280...1293
3rd c-red trav.mm: 4.00
Test pressure, bar: 30...32
                                                         Speed 1/min: 1300...1330
               : 3.70...3.80
Prestroke min
                                                      4th speed
                                                                    1/min : 1360
                    : (3.65...3.85)
J15
```

```
: 0.30...1.70
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 12...20
                  : 2.00
C-rod trav.mm
              1/min : 465...525
Speed
SET IDLE AUXILIARY SPRING
              1/min : 350
Speed
Contr.-rod trav.mm: 6,40...7.00
TORQUE CONTROL
Torque-control curve - 1st version
             1/min : 1150
1st speed
                   : 9.90...10.10
  C-rod trav.mm
2nd speed 1/min: 750
  C-rod trav.mm : 10.60...10.70
3rd speed 1/min: 950
                     : 10.30...10.40
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
              1/min : 600
Speed
Del.quantity cm3/: 66.0...68.0
1000H.: (64.0...70.0)
               cm3/ : 5.00
Dispersion
              1000H.: (7.00)
1/min : 900
Speed
Del.quantity cm3/: 76.0...78.0
1000H.: (73.0...81.0)
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 80.0...90.0
1000H.: (77.0...93.0)
LOW IDLE
              1/min : 350
Speed
Contr.-rod trav.mm: 6.40...7.00
Del.quantity cm3/: 10.0...12.0
1000H.: (8.0...14.0)
Dispersion cm3/: 3.50
1000H.: (5.00)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Contr.-rod trav.mm: 9.00...12.00
                                                         Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                     : PEN 6_1 P
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                     : 09.03.87
Edition
Superceeded
                    : ISO-4113
Calibrating oil
                                                         BASIC SETTING
                     : 0 403 476 046
Combination no.
                                                                         1/mi: 1000
                                                         1st speed
Injection pump
Pump designation : PES6MW100/320RS1132
                                                         Contr.-rod trav.mm: 10.90...11.00
EP type number
                     : 0 413 406 124
                                                         Del.quantity cm3/: 8.7...8.9
Governor
                     : RSV325...1400MW2A314
Governor design.
                       -1
                                                                         100H.: (8.5...9.1)
                     : 0 420 085 053
Governer no.
                                                                         cm3/:0.3
                                                         Dispersion
Customer-spec. information
                                                                         100H.: (0.6)
Customer
                    : VOLVO-PENTA
                                                         2nd speed 1/min: 325.0
Contr.-rod trav. m: 6.0...6.1
Del.quantity cm3/: 1.2...1.6
100H.: (0.9...1.8)
Dispersion cm3/: 0.3
                     : TD 61 A
Engine
1st version kW : 147.0
               1/min: 2800
Speed
TEST BENCH REQUIREMENTS
                                                                         100H.: (0.5)
Calibrating-oil inlet temp. °C
                                                         SLEEVE POSITION
                     : 38...42
                                                         Control-lever position
                                                                       Degree: 3
1/min: 800
Overflow valve
                                                         Cont.-rod travelmm: 0.30...1.00
                     : 1 417 413 000
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                         1st version
                                                         Speed 1/min: 1000
Charge press. hPa: 900
Del.quantity cm3/: 87.0...89.0
1000H.: (85.0...91.0)
Dispersion cm3/: 3.50
            : 0 681 343 009
 assembly
Opening
 pressure, bar
                    : 172...175
                                                                    1000H.: (6.00)
Test inj. tubing
                    : 1 680 750 014
                                                         HIGHEST RATED SPEED
Outside diameter
                                                         1st version
x Wall thickness
                                                         Control-lever
                                                          position degrees: 54...62
x Length mm
                     : 2.00x6.00x600
(A) Injection pump setting values
                                                         Testing:
    Insp. values in parentheses
Set constant delivery quant.
                                                         1st c-rod trav.mm : 10.00
                                                           Speed 1/min: 1440...1450
                                                         2nd c-rod trav.mm : 4.00
    per values ____
                                                           Speed 1/min: 1520...1540
th speed 1/min: 1650
C-rod trav.mm: 0.30...1.70
START OF DELIVERY
                                                         4th speed
Test pressure, bar: 30...32
                     : 2.90...3.00
                                                         LOWEST RATED SPEED I
Prestroke min
                     : (2.85...3.05)
                                                         Control-lever
```

position degrees: 18...26 Setting point w/out aux. spring 1/min : 325 Speed Contr.-rod trav.mm: 5.5 Testing: 1/min : 100 Speed C-rod trav.mm min : 19.00 1/min : 325 Speed : 5.50...5.60 C-rod trav.mm compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 220 Contr.-rod trav.mm: 10.00...10.10 Measurement 1/min : 500 Speed 1st pressure hPa C-rod trav.mm : 9.80...9.90 2nd pressure hPa : 330 C-rod trav.mm : 10.20...10.50 : 900 3rd pressure hPa C-rod trav.mm : 10.90...11.00 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 50.0...52.0 1000H.: (48.0...54.0) STARTING FUEL DELIVERY Speed 1/min : 100 Del.quantity cm3/: 140.0...160.0 1000H.: (137.0...163.0) Contr.-rod trav.mm: 19.00...21.00 LOW IDLE 1/min : 325 Speed Contr.-rod trav.mm: 6.00...6.10 Del.quaritity cm3/: 12.0...16.0 1000H.: (9.5...18.5) Dispersion cm3/: 3.50 1000H.: (5.50) Remarks:

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence : 1-5-3-6-2-4
Note insta in remarks column
                   : MB 6.0 D 22
: 09.03.87
Test sheet
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition
Superceeded
Calibrating oil
                   : ISO-4113
                                                    BASIC SETTING
Combination no.
                   : 0 403 476 054
                                                    1st speed
                                                                 1/mi: 1200
Injection pump
                   : PES6MW100/720RS1139
                                                    Contr.-rod trav.mm: 11.80...11.90
Pump designation
EP type number
                   : 0 413 406 134
                                                    Del.quantity cm3/ : 8.3...8.5
Governor
                   : RSV350...1200MW1A316
Governor design.
                                                                  100H.: (8.1...8.7)
                     -2
                   : 0 420 085 076
Governer no.
                                                    Dispersion
                                                                  cm3/: 0.35
Customer-spec. information
                                                                  100H.: (0.6)
Customer
                   : DB
                                                    2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.0...7.6
Engine
                   : 0M366A
                                                    Del.quantity cm3/: 1.0...1.2
100H.: (0.7...1.5)
1st version kW : 115.0
              1/min: 2400
Speed
                                                                  cm3/ : 0.35
                                                    Dispersion
                                                                  100H.: (0.5)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                    SLEEVE POSITION
                   : 38...42
                                                    Control-lever position
                                                                 Degree: -3
1/min: 800
Overflow valve
                   : 1 417 413 000
                                                    Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
                                                    Governor-spring reload
                                                    Notch setting x : 3.00
Calibrating nozzle-holder
           : 0 681 343 009
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                    1st version
                                                                  1/min: 1200
 pressure, bar : 172...175
                                                    Speed
                                                    Del.quantity cm3/: 83.0...85.0
                                                                 1000H.: (81.0...87.0)
cm3/ : 3.50
1000H.: (6.00)
                                                    Dispersion
Test inj. tubing : 1 680 750 008
Outside diameter
                                                    HIGHEST RATED SPEED
x Wall thickness
                   : 6.00x2.00x600
                                                    1st version
x Length mm
                                                    Control-lever
                                                     position degrees: 64...72
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    Testing:
    per values
                                                    1st c-rod trav.mm : 10.80
                                                      Speed
                                                               1/min : 1240...1245
                                                    2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                                1/min : 1285...1298
                                                      Speed
Test pressure, bar: 30...32
                                                    3rd c-rod trav.mm : 4.00
                                                      Speed 1/min: 1335...1365
Prestroke min
                   : 3.70...3.80
                                                    4th speed 1/min: 1450
                   : (3.65...3.85)
J19
```

```
C-rod trav.mm : 0.30...1.70
LOWEST RATED SPEED I
Setting point w/out aux. spring
             1/min : 350
Speed
Contr.-rod Trav.mm: 7.3
Testing:
              1/min : 100
Speed
C-rod trav.mm min: 19.00
              1/min : 350
Speed
                   : 7.00...7.60
: 2.00
C-rod tray.mm
C-rod trav.mm
              1/min: 515...585
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1200
 C-rod trav.mm : 11.80...11.90
2nd speed 1/min: 750
C-rod trav.mm : 12.30...12.40
3rd speed 1/min : 1000
  C-rod trav.mm : 11.90...12.10
FUEL-DELIVERY CHARACTERISTICS
              1/min : 750
Speed
Del.quantity cm3/: 81.0...83.0
1000H.: (79.0...85.0)
Dispersion cm3/: 5.00
1000H.: (7.00)
STARTING FUEL DELIVERY
Speed
              1/min : 100
Del.quantity cm3/: 80.0...90.0
1000H.: (77.0...93.0)
LOW IDLE
              1/min : 350
Speed
Contr.-rod trav.mm: 7.00...7.60
Del.quantity cm3/: 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/: 3.50
1000H.: (5.00)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
                    : MB 6.0 D 31
: 13.05.87
Test sheet
                                                        SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Edition
Superceeded
                    : ISO-4113
Calibrating oil
                                                        BASIC SETTING
                    : 0 403 476 054
Combination no.
                                                        1st speed
                                                                      1/mi: 1200
Injection pump
Pump designation : PES6MW100/720RS1144
                                                        Contr.-rod trav.mm: 11.80...11.90
EP type number
                    : 0 413 406 138
Governor
                                                        Del.quantity cm3/: 8.3...8.5
Governor design.
                     : RSV350...1200MW1A316
                                                                       100H.: (8.1...8.7)
                       -2
                    : 0 420 085 076
Governer no.
                                                                       cm3/:0.3
                                                        Dispersion
Customer-spec. information
Customer
                                                                       100H.: (0.6)
                                                        2nd speed 1/min: 350.0
Contr.-rod trav. m: 7.0...7.6
Del.quantity cm3/: 1.0...1.2
100H.: (0.7...1.5)
                    : 0M366A
Engine
1st version kW : 115.0
              1/min: 2400
Speed
                                                                      cm3/: 0.3
100H.: (0.5)
                                                        Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                        SLEEVE POSITION
                    : 38...42
inlet temp.
                                                        Control-lever position
                                                                     Degree: -3
1/min: 800
Overflow valve
                     : 1 417 413 000
                                                        Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
                                                        Governor-spring reload
                                                        Notch setting x : 3.00
Calibrating nozzle-holder
                : 0 681 343 009
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                        1st version
                                                       Speed 1/min: 1200
Del.quantity cm3/: 83.0...85.0
1000H.: (81.0...87.0)
Dispersion cm3/: 3.50
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 008
                                                                     1000H.: (6.00)
Outside diameter
x Wall thickness
                                                        HIGHEST RATED SPEED
                    : 6.00x2.00x600
x Length mm
                                                        1st version
                                                        Control-lever
(A) Injection pump setting values
                                                         position degrees: 64...72
    Insp. values in parentheses
Set constant delivery quant.
                                                        Testing:
    per values
                                                        1st c-rod trav.mm : 10.80
                                                                    1/min : 1240...1245
                                                          Speed
START OF DELIVERY
                                                        2nd c-rod trav.mm: 4.00
Test pressure, bar: 30...32
                                                                   1/min : 1285...1298
                                                          Speed
                                                        3rd c-rod trav.mm : 4.00
                                                                    1/min : 1335...1365
1/min : 1450
              : 3.70...3.80
Prestroke min
                                                          Speed
                    : (3.65...3.85)
                                                        4th speed
J21
```

```
C-rod trav.mm : 0.30...1.70
LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed
               1/min : 350
Contr.-rod trav.mm: 7.3
Testing:
Speed
                1/min : 100
C-rod trav.mm min : 19.00
                1/min : 350
Speed
                        : 7.00...7.60
C-rod trav.mm
C-rod trav.mm
                        : 2.00
               1/min : 515...585
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1200
  G-rod trav.mm : 11.80...11.90
2nd speed 1/min: 750
C-rod trav.mm : 12.30...12.40
3rd speed 1/min : 1000
  C-rod trav.mm : 11.90...12.10
FUEL-DELIVERY CHARACTERISTICS
               1/min : 750
Speed
Del.quantity cm3/: 81.0...83.0
1000H:: (79.0...85.0)
Dispersion cm3/: 5.00
1000H:: (7.00)
STARTING FUEL DELIVERY
                1/min : 100
Speed
Del.quantity cm3/: 80.0...90.0
1000H:: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00
LOW IDLE
                1/min : 350
Speed
Contr.-rod trav.mm: 7.00...7.60
Del.quantity cm3/: 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/: 3.50
1000H.: (5.00)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                     : MB 6.0 D 23
: 09.03.87
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Edition
Superceeded
Calibrating oil : ISO-4113
                                                        BASIC SETTING
                    : 0 403 476 055
Combination no.
                                                        1st speed
                                                                        1/mi: 1200
Injection pump
Pump designation : PES6MW100/720RS1139
                                                        Contr.-rod trav.mm: 9.60...9.70
EP type number
                     : 0 413 406 134
                                                        Del.quantity cm3/: 6.6...6.8
Governor
Governor design.
                     : RSV350...1200MW1A316
                      -3
                                                                       100H.: (6.4...7.0)
                     : 0 420 085 077
Governer no.
                                                        Dispersion
                                                                       cm3/:0.35
Customer-spec. information
Customer
                                                                       100H.: (0.6)
                                                        2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.3...6.9
                    : 0M366A
Engine
                                                        Del.quantity cm3/: 1.0...1.2
100H.: (0.7...1.5)
1st version kW : 92.0
               1/min: 2400
Speed
                                                                       cm3/: 0.35
100H.: (0.5)
                                                        Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                        SLEEVE POSITION
                     : 38...42
                                                        Control-lever position
                                                                     Degree: -3
1/min: 800
Overflow valve
                     : 1 417 413 000
                                                        Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
                                                        Governor-spring reload
                                                        Notch setting x : 15.00
Calibrating nozzle-holder
              : 0 681 343 009
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                        1st version
pressure, bar
                   : 172...175
                                                                       1/min: 1200
                                                        Speed
                                                        Del.quantity cm3/: 66.0...68.0
1000H: (64.0...70.0)
Dispersion cm3/: 3.50
                   : 1 680 750 008
Test inj. tubing
                                                                      1000H.: (6.00)
Outside diameter x Wall thickness
                                                        HIGHEST RATED SPEED
                    : 6.00x2.00x600
x Length mm
                                                        1st version
                                                        Control-lever
                                                         position degrees: 58...66
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        Testing:
                                                        1st c-rod trav.mm : 9.10
Speed 1/min : 1240...1245
2nd c-rod trav.mm : 4.00
    per values
START OF DELIVERY
                                                        Speed 1/min: 1263...1276
3rd c-rod trav.mm: 4.00
Test pressure, bar: 30...32
                 : 3.70...3.80
                                                                    1/min: 1290...1320
                                                          Speed
Prestroke min
                    : (3.65...3.85)
                                                                     1/min : 1450
                                                        4th speed
```

```
C-rod trav.mm : 0.30...1.70
5th speed 1/min: 1240...1255
  C-rod trav.mm
                     : 8.60
LOWEST RATED SPEED I
Setting point w/out aux. spring
             1/min : 350
Speed
Contr.-rod trav.mm: 6.6
Testing:
              1/min : 100
Speed
C-rod trav.mm min: 19.00
Speed 1/min: 350
C-rod trav.mm
                  : 6.30...6.90
C-rod trav.mm
                    : 2.00
              1/min : 415...475
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1200
  C-rod trav.mm : 10.10...10.20
2nd speed 1/min: 850
  C-rod trav.mm : 10.70...10.90
3rd speed 1/min: 950
  C-rod trav.mm : 10.40...10.60
FUEL-DELIVERY CHARACTERISTICS
             1/min : 800
Speed
Del.quantity cm3/: 68.0...70.0
1000H: (66.0...72.0)
Dispersion cm3/: 5.00
              1000H.: (7.00)
STARTING FUEL DELIVERY
Speed
              1/min : 100
Del.quantity cm3/: 80.0...90.0
1000H.: (77.0...93.0)
LOW IDLE
              1/min : 350
Speed
Contr.-rod trav.mm: 6.30...6.90
Del.quantity cm3/: 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/: 3.50
              1000H.: (5.00)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Contr.-rod trav.mm: 9.00...12.00
                                                     Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                   : MB 6,0 D 32
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : 05.06.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                     BASIC SETTING
                   : 0 403 476 055
Combination no.
                                                                    1/mi: 1200
                                                     1st speed
Injection pump
Pump designation : PES6MW100/720RS1144
                                                     Contr.-rod trav.mm: 9.60...9.70
EP type number
                   : 0 413 406 138
Governor
                                                     Del.quantity cm3/ : 6.6...6.8
                   : RSV350...1200MW1A316
Governor design.
                                                                   100H.: (6.4...7.0)
                     -3
                   : 0 420 085 077
Governer no.
                                                                   cm3/:0.3
                                                     Dispersion
Customer-spec. information
Customer
                                                                   100H.: (0.6)
                                                    2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.3...6.9
Del.quantity cm3/: 1.0...1.2
100H.: (0.7...1.5)
Engine
                   : 0M366A
1st version kW : 92.0
Speed
              1/min: 2400
                                                                   cm3/: 0.3
100H.: (0.5)
                                                     Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                     SLEEVE POSITION
                                                     Control-lever position
                   : 38...42
                                                                  Degree: -3
1/min: 800
Overflow valve
                                                     Cont.-rod travelmm: 0.30...1.00
                    : 1 417 413 000
                                                     Governor-spring reload
Inlet press., bar : 1.50
                                                     Notch setting x : 15.00
Calibrating nozzle-holder
           : 0 681 343 009
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
                                                     1st version
Opening
 pressure, bar : 172...175
                                                                   1/min: 1200
                                                     Speed
                                                     Del.quantity cm3/: 66.0...68.0
1000H.: (64.0...70.0)
                                                                  cm3/ : 3.50
Test inj. tubing : 1 680 750 008
                                                     Dispersion
                                                                  1000H.: (6.00)
Outside diameter
x Wall thickness
                                                     HIGHEST RATED SPEED
x Length mm
                   : 6.00x2.00x600
                                                     1st version
                                                     Control-lever
                                                      position degrees: 58...66
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     Testing:
    per values ____
                                                     1st c-rod trav.mm : 9.10
                                                                 1/min : 1240...1245
                                                       Speed
                                                     2nd c-rod trav.mm : 4.00
START OF DELIVERY
Test pressure, bar: 30...32
                                                       Speed
                                                                 1/min : 1263...1276
                                                     3rd c-rod trav.mm: 4.00
                                                                 1/min: 1290...1320
Prestroke mm
                  : 3.70...3.80
                                                       Speed
                   : (3.65...3.85)
                                                     4th speed
                                                                  1/min : 1450
J25
```

```
C-rod trav.mm : 0.30...1.70
5th speed 1/min: 1240...1255
  C-rod trav.mm
                     : 8.60
LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed
             1/min : 350
Contr.-rod trav.mm: 6.6
Testing:
              1/min : 100
Speed
C-rod trav.mm min: 19.00
              1/min : 350
Speed
C-rod trav.mm
                   : 6.30...6.90
                     : 2.00
C-rod trav.mm
              1/min : 415...475
Speed
TORQUE CONTROL
Torque-control curve - 1st version
C-rod trav.mm : 9.60...9.70
2nd speed 1/min: 800
C-rod trav.mm : 10.50...10.60
3rd speed 1/min : 950
  C-rod trav.mm : 9.90...10.10
FUEL-DELIVERY CHARACTERISTICS
              1/min : 800
Speed
Del.quantity cm3/: 68.0...70.0
1000H.: (66.0...72.0)
Dispersion cm3/: 5.00
1000H.: (7.00)
STARTING FUEL DELIVERY
Speed
              1/min : 100
Del.quantity cm3/: 80.0...90.0
1000H:: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00
LOW IDLE
Speed
              1/min : 350
Contr.-rod trav.mm: 6.30...6.90
Del.quantity cm3/: 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/: 3.50
              1000H.: (5.00)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Contr.-rod trav.mm: 9.00...12.00
                                                       Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                    : MB 6,0 D 24
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : 03.04.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                      BASIC SETTING
                    : 0 403 476 056
Combination no.
                                                       1st speed
                                                                      1/mi: 1200
Injection pump
Pump designation : PES6MW100/720RS1139
                                                       Contr.-rod trav.mm: 11.40...11.50
EP type number
                    : 0 413 406 134
                                                      Del.quantity cm3/: 7.5...7.7
Governor
Governor design.
                    : RSV350...1200MW1A316
                                                                     100H.: (7.3...7.9)
                     -4
Governer no.
                   : 0 420 085 078
                                                      Dispersion
                                                                     cm3/: 0.35
Customer-spec. information
Customer
                                                                     100H.: (0.6)
                   : DB
                                                      2nd speed 1/min: 350.0
Contr.-rod trav. m: 6.1...6.7
Del.quantity cm3/: 1.0...1.2
100H:: (0.7...1.5)
Engine
                    : 0M366A
1st version kW : 100.0
              1/min: 2400
Speed
                                                                     cm3/: 0.35
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.5)
Calibrating-oil inlet temp. OC
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                    Degree: -3
1/min: 800
Overflow valve
                    : 1 417 413 000
                                                      Cont.-rod travelmm: 0.30...1.00
                                                      Governor-spring reload
Inlet press., bar : 1.50
                                                      Notch setting x : 3.50
Calibrating nozzle-holder
             : 0 681 343 009
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
                                                      1st version
Opening
 pressure, bar : 172...175
                                                                     1/min: 1200
                                                      Speed
                                                      Del.quantity cm3/: 75.0...77.0
1000H:: (73.0...79.0)
Dispersion cm3/: 3.50
Test inj. tubing : 1 680 750 008
                                                                    1000H.: (6.00)
Outside diameter
x Wall thickness
                                                      HIGHEST RATED SPEED
                    : 6,00x2.00x600
                                                      1st version
x Length mm
                                                      Control-lever
(A) Injection pump setting values
                                                       position degrees: 51...59
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
                                                      1st c-rod trav.mm : 10.50
    per values
                                                      Speed 1/min: 1240...1245
2nd c-rod trav.mm: 4.00
START OF DELIVERY
                                                      Speed 1/min: 1271...1284
3rd c-rod trav.mm: 4,00
Test pressure, bar: 30...32
                                                                  1/min: 1290...1320
                : 3.70...3.80
                                                        Speed
Prestroke mm
                    : (3.65...3.85)
                                                      4th speed
                                                                    1/min : 1450
```

```
C-rod trav.mm : 0.30...1.70
5th speed 1/min: 1240...1255
  C-rod trav.mm
                   : 9.00
LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed
            1/min : 350
Contr.-rod trav.mm: 6.4
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 19.00
Speed 1/min: 350
C-rod trav.mm
                 : 6.10...6.70
            nm : 2.00
1/min : 415...475
C-rod trav.mm
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1200
  C-rod trav.mm : 10.00...10.10
2nd speed 1/min: 800
                  : 10.80...10.90
  C-rod trav.mm
3rd speed 1/min: 900
  C-rod trav.mm : 10.80...10.90
4th speed 1/min: 1050
  C-rod trav.mm : 10.30...10.50
FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 800 Del.quantity cm3/: 73.0...75.0
             1000H.: (71.0...78.0) cm3/: 5.00
Dispersion
             1000H.: (7.00)
STARTING FUEL DELIVERY
            1/min : 100
Speed
Del.quantity cm3/: 80.0...90.0
            1000H.: (77.0...93.0)
LOW IDLE
            1/min : 350
Speed
Contr.-rod trav.mm: 6.10...6.70
Del.quantity cm3/: 10.0...12.0
            1000H.: (7.0...15.0)
cm3/: 3.50
Dispersion
             1000H.: (5.00)
Remarks:
```

garmana:

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
                   : MB 6.0 D 33
Test sheet
                                                     SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
                   : 05.06.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                     BASIC SETTING
Combination no.
                   : 0 403 476 056
                                                     1st speed
                                                                1/mi: 1200
Injection pump
Pump designation : PES6MW100/720RS1144
                                                     Contr.-rod trav.mm; 10.00...10.10
EP type number
                   : 0 413 406 138
                                                     Del.quantity cm3/ : 7.5...7.7
Governor
Governor design.
                   : RSV350...1200MW1A316
                                                                   100H.: (7.3...7.9)
                   : 0 420 085 078
Governer no.
                                                     Dispersion
                                                                   cm3/:0.3
Customer-spec. information
                                                                   100H.: (0.6)
Customer
Engine
                   : 0M366A
                                                     2nd speed
                                                                   1/min: 350.0
                                                     Contr.-rod trav. m: 6.1...6.7
                                                    Del.quantity cm3/: 1.0...1.2
100H:: (0.7...1.5)
Dispersion cm3/: 0.3
1st version kW : 100.0
              1/min: 2400
Speed
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.5)
Calibrating-oil inlet temp. °C
                                                     SLEEVE POSITION
                   : 38...42
                                                     Control-lever position
                                                                 Degree: -3
                                                                   17min: 800
Overflow valve
                   : 1 417 413 000
                                                     Cont.-rod travelmm: 0.30...1.00
                                                     Governor-spring reload
Inlet press., bar: 1.50
                                                     Notch setting x : 3.50
Calibrating nozzle-holder
             : 0 681 343 009
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
Opening
                                                     1st version
                                                    Speed 1/min: 1200
Del.quantity cm3/: 75.0...77.0
1000H.: (73.0...79.0)
Dispersion cm3/: 3.50
 pressure, bar : 172...175
Test inj. tubing : 1 680 750 008
                                                                  1000H.: (6.00)
Outside diameter
                                                    HIGHEST RATED SPEED
x Wall thickness
                  : 6.00x2.00x600
x Length mm
                                                    1st version
                                                    Control-lever
                                                     position degrees: 51...59
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    Testing:
                                                    1st c-rod trav.mm : 10.50
    per values ____
                                                       Speed 1/min: 1240...1245
                                                    2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                               1/min: 1271...1284
                                                       Speed
Test pressure, bar: 30...32
                                                    3rd c-rod trav.mm : 4.00
                                                                1/min: 1290...1320
                : 3.70...3.80
                                                       Speed
Prestroke mm
                                                     4th speed 1/min: 1450
                   : (3.65...3.85)
K01
```

```
C-rod trav.mm : 0.30...1.70
5th speed 1/min: 1240...1255
  C-rod trav.mm
                      : 9.00
LOWEST RATED SPEED I
Setting point w/out aux. spring
Speed
              1/min : 350
Contr.-rod trav.mm: 6.4
Testing:
Speed 1/min: 100
C-rod trav.mm min: 19.00
Speed 1/min: 350
C-rod trav.mm
                     : 6.10...6.70
                     : 2.00
C-rod trav.mm
               1/min : 415...475
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1200
C-rod trav.mm : 10.00...10.10
2nd speed 1/min: 800
                     : 10.90...11.00
  C-rod trav.mm
3rd speed 1/min: 900
  C-rod trav.mm : 10.90...11.00
4th speed 1/min : 1050
  C-rod trav.mm : 10.30...10.50
FUEL-DELIVERY CHARACTERISTICS
               1/min : 800
Speed
Del.quantity cm3/ : 73.0...75.0
               1000H.: (71.0...78.0)
cm3/: 5.00
1000H.: (7.00)
Dispersion
STARTING FUEL DELIVERY
Speed
               1/min : 100
Del.quantity cm3/: 80.0...90.0
1000H:: (77.0...93.0)
Contr.-rod trav.mm: 19.00...21.00
LOW IDLE
Speed
               1/min : 350
Contr.-rod trav.mm: 6.10...6.70
Del.quantity cm3/: 10.0...12.0
1000H.: (7.0...15.0)
Dispersion cm3/: 3.50
1000H.: (5.00)
Remarks:
```

```
: 1- 8- 7- 2- 6- 5-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                  Cam sequence
                                                                        4- 3
Note inst. in remarks column
Test sheet
                  : KHD 13,4 D
                  : 05.06.87
                                                  SD ang. spacing CS: 0-45-90-135-180-225-
Edition
Superceeded
                                                                      270-315
                                                  Tolerance + - 0
                                                                    : 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no.
                  : 0 403 548 007
                                                  BASIC SETTING
Injection pump
                                                  1st speed
                                                              1/mi: 1150
Pump designation : PEBMW100/720LS1118
EP type number
                : 0 413 508 102
                                                  Contr.-rod trav.mm: 12.10...12.20
Governor
                                                  Del.quantity cm3/: 12.9...13.1
Governor design. : RQV300...1150MW56
Governer no. : 0 420 083 075
                                                               100H.: (12.7...13.3)
Customer-spec. information
Customer
                                                  Dispersion
                                                               cm3/:0.3
                  : KHD
                  : BF8L513
                                                               100H.: (0.6)
Engine
1st version kW : 222.0
                                                  2nd speed
                                                               1/min: 300.0
             1/min: 2300
                                                  Contr.-rod trav. m: 6.9...7.0
Speed
                                                  Del.quantity cm3/: 1.6...2.0
                                                               100H.: (1.3...2.2)
TEST BENCH REQUIREMENTS
                                                               cm3/:0.3
                                                  Dispersion
Calibrating-oil inlet temp. OC
                                                               100H.: (0.5)
                 : 38...42
                                                  SLEEVE POSITION
Overflow valve
                                                  Control-lever position
                                                             Degree: -1
1/min: 1175
                  : 1 417 413 000
                                                  Speed
                                                  Cont.-rod travelmm: 15.20...17.80
Inlet press., bar : 1.50
                                                  FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                : 0 681 343 009
 assembly
                                                  1st version
Opening
                                                  Speed
                                                               1/min: 1150
                                                  Charge press. hPa: 800
pressure, bar : 172...175
                                                  Del.quantity cm3/: 129.0...131.0
                                                 1000H.: (127.0...133.0)
Dispersion cm3/ : 3.50
Test inj. tubing : 1 680 740 014
                                                              1000H.: (6.00)
Outside diameter
x Wall thickness
                                                 HIGHEST RATED SPEED
                : 6.00x2.00x600
                                                  1st version
x Length mm
                                                  Control-lever
                                                  position degrees: 51...59
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                  Testing:
    per values
                                                  1st c-rod trav.mm : 12.60
                                                    Speed 1/min: 1190...1200
START OF DELIVERY
                                                  2nd c-rod trav.mm : 4.00
                                                            1/min : 1300...1330
1/min : 1400
Test pressure, bar: 30...32
                                                   Speed
                                                  4th speed
                                                                    : 0.00...1.00
Prestroke mm
                  : 3.10...3.20
                                                   C-rod trav.mm
                  : (3.05...3.25)
Contr.-rod trav.mm: 9.00...12.00
                                                 LOWEST RATED SPEED I
KO3
```

Control-lever position degrees: 18...26 Setting point w/out aux. spring 1/min : 300 Speed Contr.-rod trav.mm: 6.9 C-rod trav.mm min : 8.50 1/min : 300 Speed C-rod trav.mm : 6.90...7.00 CONSTANT REGULATION 1/min : 330...400 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1150 1st speed : 13.60...13.70 C-rod trav.mm 2nd speed 1/min: 700 C-rod trav.mm : 14.20. ..14.30 3rd speed 1/min: 900 C-rod trav.mm : 13.80...14.10 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 360 Pressure Contr.-rod trav.mm: 13.90...14.00 Measurement Speed 1/min : 500 1st pressure hPa : 13.2...13.30 C-rod trav.mm 2nd pressure hPa : 260 : 13.40...13.70 C-rod trav.mm : 800 3rd pressure hPa C-rod trav.mm : 14.20...14.30 SWITCH-OVER POINT Speed 1/min : 230 (250) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 800 Speed 1/min: 700 Del.quantity cm3/: 133.0...135.0 1000H.: (131.0...137.0) cm3/:5.00Dispersion 1000H.: (7.00) Charge press. hPa : -1/min : 450 Speed Del.quantity cm3/: 104.0...106.0 1000H.: (101.5...108.5) STARTING FUEL DELIVERY

## LOW IDLE

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition : KHD 13,4 D4 : 09.03.87

Superceeded

Calibrating oil : ISO-4113

: 0 403 548 014 Combination no.

Injection pump

Pump designation : PE8MW100/720LS1128

EP type number : 0 413 508 103

Governor

Governor design. : RQ300...1150MW63-2

Governer no. : 0 420 082 019

Customer-spec. information Customer : KHD

: BF 8L 513 Engine

1st version kW : 235.0 Speed 1/min: 2300

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 740 014

Outside diameter x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY Test pressure, bar: 30...32

: 3.10...3.20 Prestroke mm : (3.05...3.25) Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-8-7-2-6-5-1st version 3 4-Control-lever position degrees: 34...42 Setting point: SD ang. spacing CS: 0-45-90-135-180-225-Speed 1/min: 600 270-315 Contr.-rod trav.mm: 20.0 Tolurance + - D : 0.50 (0.75) Testing: BASIC SETTING 1st c-rod trav.mm : 13.00 1/min : 1190...1200 Speed 2nd c-rod trav.mm : 4.00 1st speed 1/mi: 1150 1/min : 1285...1315 1/min : 1370 Speed Contr.-rod trav.mm: 13.90...14.00 4th speed C-rod trav.mm : 0.00...1.00 Del.quantity cm3/ : 14.1...14.3 LOWEST RATED SPEED I 100H.: (13.9...14.5) Control-lever position degrees: 8...16 Dispersion cm3/:0.3Setting point w/out aux. spring Speed 1/min: 300 Contr.-rod trav.mm: 7.7 100H.: (0.6) 2nd speed 1/min: 300.0 Contr.-rod trav. m: 7.7...7.8 Testing: Speed 1/min : 100 Del.quantity cm3/: 1.3...1.7 100H:: (1.1...1.9) C-rod trav.mm min: 9.30 1/min : 300 Speed cm3/: 0.3 100H.: (0.5) : 7.70...7.80 Dispersion C-rod trav.mm CONSTANT REGULATION 1/min : 330...400 (B) Setting of injection pump with Speed externally-mounted governor TORQUE CONTROL SLEEVE TRAVELS Torque-control curve - 1st version 1st speed 1/min: 1280 1/min : 1150 1st speed C-rod trav.mm : 13.90...14.00 Sleeve travel mm: 9.00...9.80 2nd speed 1/min: 1150
Sleeve travel mm: 6.60...6.80
3rd speed 1/min: 650
Sleeve travel mm: 5.80...6.20
4th speed 1/min: 300 2nd speed 1/min: 700 C-rod trav.mm : 14.90...15.00 3rd speed 1/min: 950 C-rod trav.mm : 14.20...14.50 Sleeve travel mm: 1.20...2.00 compensator (LDA, ADA, ALDA) SLEEVE POSITION Control-lever position 1st version Degree: -2 1/min: 600 Setting 1/min : 500 Speed Speed hPa : 480 Cont.-rod travelmm: 19.20...20.80 Pressure Contr.-rod trav.mm: 14.40...14.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Measurement 1/min : 500 Speed 1st version Speed 1/min: 1150 Charge press. hPa: 900
Del.quantity cm3/: 141.0...143.0
1000H.: (139.0...145.0)
Dispersion cm3/: 3.50 1st pressure hPa : 900 C-rod trav.mm : 14.90...15.00 2nd pressure hPa : -C-rod trav.mm : 12.70...12.80 3rd pressure hPa : 330 1000H.: (6.00) : 13.20...13.50 C-rod trav.mm HIGHEST RATED SPEED

K06

```
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 900
Speed 1/min: 700
Del.quantity cm3/: 153.0...155.0
1000H.: (151.0...157.0)
Dispersion cm3/: 5.00
                   1000H.: (7.00)
Charge press. hPa : -
                  1/min : 450
Speed
Del.quantity cm3/: 107.0...109.0
1000H.: (105.0...111.0)
STARTING FUEL DELIVERY
Speed
                  1/min : 100
Del.quantity cm3/: 135.0...155.0
1000H.: (132.0...158.0)
LOW IDLE
Speed 1/min: 300
Contr.-rod trav_mm: 7.70...7.80
Del.quantity cm3/: 13.0...17.0
1000H:: (11.0...19.0)
Dispersion cm3/: 3.50
1000H:: (5.50)
Remarks:
Check electrically unlatched starting
fuel delivery (EES) with 24 volt.
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 1-8-7-2-6-5-
                                                     Cam sequence
                                                                             4- 3
Note inst. in remarks column
Test sheet
                   : KHD 12,7 T6
                                                     SD ang. spacing<sup>o</sup>CS: 0-45-90-135-180-225-
                   : 09.03.87
Edition
                                                                          270-315
Superceeded
                                                     Tolerance + - 0
Calibrating oil : ISO-4113
                                                                        : 0.50 (0.75)
Combination no.
                   : 0 403 548 018
                                                     BASIC SETTING
Injection pump
                                                     1st speed
                                                                    1/mi: 1150
Pump designation : PE8MW100/720LS1117
                                                     Contr.-rod trav.mm: 11.50...11.60
EP type number
                   : 0 413 508 101
Governor
                                                     Del.quantity cm3/: 10.5...10.7
Governor design. : RQV300...1150MW75
Governer no.
                   : 0 420 083 113
                                                                   100H.: (10.3...10.9)
Customer-spec. information
                                                                   cm3/:0.3
Customer
                   : KHD
                                                     Dispersion
                   : F 8L 513
                                                                   100H.: (0.6)
Engine
1st version kW : 188.0
                                                     2nd speed
                                                                   1/min: 300.0
                                                     Contr.-rod trav. m: 8.0...8.1
Speed
              1/min: 2300
                                                     Del.quantity cm3/: 1.1...1.5
100H.: (0.9...1.7)
TEST BENCH REQUIREMENTS
                                                                   cm3/:0.3
                                                     Dispersion
                                                                   100H.: (0.5)
Calibrating-oil inlet temp. °C
                   : 38...42
                                                     SLEEVE POSITION
                                                     Control-lever position
Overflow valve
                                                                  Degree: -1
                   : 1 417 413 000
                                                                  17min: 1170
                                                     Speed
                                                     Cont.-rod travelmm: 15.20...17.80
Inlet press., bar : 1.50
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                  : 0 681 343 009
 assembly
                                                     1st version
                                                    Speed 1/min: 1150
Del.quantity cm3/: 105.0...107.0
1000H.: (103.0...109.0)
Dispersion cm3/: 3.50
1000H.: (6.00)
Opening
 pressure, bar : 172...175
Test inj. tubing : 1 680 740 014
Outside diameter
                                                     HIGHEST RATED SPEED
x Wall thickness
                                                     1st version
                                                     Control-lever
                  : 6.00x2.00x600
x Length mm
                                                      position degrees: 51...59
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     Testing:
                                                     1st c-rod trav.mm : 10.50
    per values
                                                       Speed 1/min: 1190...1200
                                                     2nd c-rod trav.mm : 4.50
                                                                1/min : 1260...1290
1/min : 1350
START OF DELIVERY
                                                      Speed
Test pressure, bar: 30...32
                                                     4th speed
                                                       C-rod trav.mm
                                                                        : 0.00...1.00
Prestroke mm
                   : 3.10...3.20
                                                     LOWEST RATED SPEED I
                   : (3.05...3.25)
Contr.-rod trav.mm: 9.00...12.00
                                                     Control-lever
KO8
```

```
position degrees: 18...26
Setting point w/out aux. spring
             1/min : 300
Speed
Contr.-rod trav.mm: 8.0
Testing:
              1/min : 100
Speed
C-rod trav.mm min : 9.70
             1/min : 300
Speed
                     : 8.00...8.10
C-rod trav.mm
CONSTANT REGULATION
              1/min: 320...420
Speed
TORQUE CONTROL
Torque-control curve - 1st version
             1/min : 1150
1st speed
                  : 11.50...11.60
  C-rod trav.mm
2nd speed 1/min: 650
  C-rod trav.mm : 12.70...12.80
3rd speed 1/min: 900
  C-rod trav.mm : 12.00...12.30
SWITCH-OVER POINT
Speed
             1/min : 220 (250)
FUEL-PELIVERY CHARACTERISTICS
              1/min : 650
Speed
Del.quantity cm3/: 113.0...115.0
              1000H.: (111.0...117.0)
cm3/: 5.00
1000H.: (7.00)
Dispersion
STARTING FUEL DELIVERY
              1/min : 100
Speed
Del.quantity cm3/: 130.0...140.0
1000H.: (127.0...143.0)
LOW IDLE
              1/min : 300
Speed
Contr.-rod trav.mm: 8.00...8.10
Del.quantity cm3/: 11.0...15.0
1000H.: (9.0...17.0)
Dispersion cm3/: 3.50
1000H.: (5.50)
Remarks:
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 1- 8- 7- 2- 6- 5-
                                                     Cam sequence
                                                                             4- 3
Note inst. in remarks column
Test sheet
                   : KHD 13,4 D5
Edition
                   : 09.03.87
                                                     SD ang. spacing CS: 0-45-90-135-180-225-
                                                                          270-315
Superceeded
                                                     Tolerance + - 0
Calibrating oil : ISO-4113
                                                                         : 0.50 (0.75)
                   : 0 403 548 019
Combination no.
                                                     BASIC SETTING
                                                                    1/mi: 900
Injection pump
                                                     1st speed
Pump designation : PE8MW100/720LS1118
EP type number
                                                     Contr.-rod trav.mm: 11.00...11.10
                   : 0 413 508 102
Governor
                                                     Del.quantity cm3/: 10.3...10.5
Governor design. : RQV425...900MW76
Governer no.
                   : 0 420 083 114
                                                                   100H.: (10.1...10.7)
Customer-spec. information
                                                                   cm3/:0.3
Customer
                   : KHD
                                                     Dispersion
Engine
                   : BF8L513
                                                                   100H.: (0.6)
                                                                   1/min: 425.0
1st version kW
                 : 160.0
                                                     2nd speed
                                                     Contr.-rod trav. m: 6.0...6.1
Del.quantity cm3/: 1.3...1.7
100H.: (1.1...1.9)
Speed
              1/min: 1800
TEST BENCH REQUIREMENTS
                                                                   cm3/ : 0.3
                                                     Dispersion
Calibrating-oil inlet temp. OC
                                                                   100H.: (0.5)
                   : 38...42
                                                     (B) Setting of injection pump with
Overflow valve
                                                         externally-mounted governor
                    : 1 417 413 000
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 950
Inlet press., bar : 1.50
                                                       Sleeve travel mm: 8.70...8.80
Calibrating nozzle-holder
                                                     2nd speed 1/min: 1000
                                                       Sleeve travel mm: 9.70...10.10
 assembly
                  : 0 681 343 009
                                                     3rd speed 1/min: 600
Sleeve travel mm: 3.90...4.50
4th speed 1/min: 425
Opening
 pressure, bar : 172...175
                                                       Sleeve travel mm: 1.60...2.00
                                                     SLEEVE POSITION
Test inj. tubing : 1 680 740 014
                                                     Control-lever position
                                                                 Degree: -1
1/min: 925
Outside diameter
x Wall thickness
                                                     Speed
                : 6.00x2.00x600
                                                     Cont.-rod travelmm: 15.20...17.80
x Length mm
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     1st version
    per values
                                                     Speed
                                                                   1/min: 900
                                                     Del.quantity cm3/: 103.0...105.0
                                                                 1000H.: (101.0...107.0) cm3/: 3.50
START OF DELIVERY
Test pressure, bar: 30...32
                                                     Dispersion
                                                                  1000H.: (6.00)
Prestroke mm
                     3.10...3.20
                   : (3.05...3.25)
                                                    HIGHEST RATED SPEED
Contr.-rod trav.mm: 9.00...12.00
                                                     1st version
K10
```

```
Control-lever
 position degrees: 51...59
Testing:
1st c-rod trav.mm : 10.00
  Speed 1/min: 940...950
2nd c-rod trav.mm: 4.50
           1/min: 985...1015
  Speed
LOWEST RATED SPEED I
Control-lever
 position degrees: 20...28
Setting point w/out aux. spring
             1/min : 425
Speed
Contr.-rod trav.mm: 6.0
             1/min : 425
Speed
                    : 6.00...6.10
C-rod trav.mm
CONSTANT REGULATION
             1/min: 435...520
Speed
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 900
1st speed
  C-rod trav.mm : 11.00...11.10
2nd speed
           1/min : 600
  C-rod trav.mm : 11.60...11.70
3rd speed 1/min : 750
  C-rod trav.mm : 11.20...11.50
SWITCH-OVER POINT
             1/min: 360 (400)
Speed
FUEL-DELIVERY CHARACTERISTICS
             1/min : 600
Speed
Del.quantity cm3/: 109.0...111.0
1000H.: (107.5...113.0)
Dispersion cm3/: 5.00
             1000H.: (7.00)
STARTING FUEL DELIVERY
             1/min : 100
Speed
Del.quantity cm3/ : 140.0...150.0
             1000H.: (137.0...153.0)
LOW IDLE
            1/min : 425
Speed
Contr.-rod trav.mm: 6.00...6.10
Del.quantity cm3/: 13.0...17.0
1000H.: (11.0...19.0)
Dispersion cm3/: 3.50
             1000H.: (5.50)
Remarks:
```

```
: 1- 8- 7- 2- 6- 5-
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence
                                                                            4- 3
Note inst. in remarks column
Test sheet
                   : KHD 13,4 D7
                   : 13.05.87
                                                    SD ang. spacing CS: 0-45-90-135-180-225-
                                                                          270-315
Superceeded
                                                    Tolerance + - D
Calibrating oil : ISO-4113
                                                                        : 0.50 (0.75)
Combination no.
                  : 0 403 548 020
                                                    BASIC SETTING
Injection pump
                                                                  1/mi: 1150
                                                     1st speed
Pump designation : PE8MW100/720LS1128
EP type number : 0 413 508 103
                                                    Contr.-rod trav.mm: 12.80...12.90
Governor
Governor design. : RQV300...1150MW56-1
                                                    Del.quantity cm3/: 14.1...14.3
Governer no.
                   : 0 420 083 125
                                                                   100H.: (13.9...14.5)
Customer-spec, information
Customer
                   : KHD
                                                    Dispersion
                                                                  cm3/:0.3
                   : BF 8L 513
                                                                   100H.: (0.6)
Engine
                 : 235.0
                                                                   1/min: 300.0
1st version kW
                                                    2nd speed
             1/min: 2300
                                                    Contr.-rod trav. m: 6.5...6.6
Speed
                                                    Del.quantity cm3/: 1.3...1.7
                                                                  100H.: (1.1...1.9)
cm3/: 0.3
TEST BENCH REQUIREMENTS
                                                    Dispersion
Calibrating-oil inlet temp. C
                                                                   100H.: (0.5)
                   : 38...42
                                                     (B) Setting of injection pump with
Overflow valve
                                                         externally-mounted governor
                   : 1 417 413 000
                                                    SLEEVE TRAVELS
                                                    1st speed 1/min: 1280
Inlet press., bar : 1.50
                                                       Sleeve travel mm: 9.00...9.80
                                                    2nd speed 1/min: 1150
Calibrating nozzle-holder
                  : 0 681 343 009
                                                      Sleeve travel mm: 6.60...6.80
 assembly
                                                    3rd speed 1/min: 650
Sleeve travel mm: 5.80...6.20
4th speed 1/min: 300
Opening
pressure, bar : 172...175
                                                      Sleeve travel mm: 1.20...2.00
                                                    SLEEVE POSITION
Test inj. tubing : 1 680 740 014
                                                    Control-lever position
Outside diameter
                                                                 Degree: -1
                                                                  17min: 1175
x Wall thickness
                                                    Speed
                                                    Cont.-rod travelmm: 15.20...17.80
                 : 6.00x2.00x600
x Length mm
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    1st version
    per values
                                                                  1/min: 1150
                                                    Speed
                                                    Charge press. hPa: 900
Del.quantity cm3/: 141.0...143.0
1000H.: (139.0...145.0)
Dispersion cm3/: 3.50
START OF DELIVERY
Test pressure, bar: 30...32
                                                                 1000H.: (6.00)
                   : 3.10...3.20
Prestroke mm
                   : (3.05...3.25)
Contr.-rod trav.mm: 9.00...12.00
                                                    HIGHEST RATED SPEED
K12
```

1st version Control-lever position degrees: 50...58 Testing: 1st c-rod trav.mm : 11.80 1/min : 1190...1200 Speed 2nd c-rod trav.mm : 4.00 1/min: 1300...1330 Speed 1/min : 1370 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrées: 14...22 Setting point w/out aux. spring Spend 1/min : 300 Contr.-rod trav.mm: 6.5 Testing: 1/min : 100 Speed C-rod trav.mm min : 8.10 Speed 1/min: 300 C-rod trav.mm : 6.50...6.60 CONSTANT REGULATION 1/min : 320...400 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1150 1st speed C-rod trav.mm : 12.80...12.90 2nd speed 1/min: 700 C-rod trav.mm : 13.80...13.90 1/min : 950 3rd speed : 13.10...13.40 C-rod trav.mm compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 480 Pressure Contr.-rod trav.mm: 13.40...13.50 Measurement 1/min : 500 Speed 1st pressure hPa : 11.70...11.80 C-rod trav.mm : 330 2nd pressure hPa : 12.50...12.80 C-rod trav.mm 3rd pressure hPa : 900 : 13.80...13.90 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 K13

#### STARTING FUEL DELIVERY

Speed 1/min: 100 Del.quantity cm3/: 135.0...155.0 1000H.: (132.0...158.0)

### LOW IDLE

Remarks: Test electrically-released starting quantity (EES) with 12 volts BOSCH INJ. PUMP TEST SPECIFICATIONS : 1- 8- 7- 2- 6- 5 Cam sequence Note inst. in remarks column Test sheet : KHD 13\_4 D8 SD ang. spacing CS: 0-45-90-135-180-225-270-315 : 13.05.87 Edition Superceeded Tolerance + - 0 : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 403 548 021 BASIC SETTING Injection pump 1st speed 1/mi: 1150 Pump designation : PE8MW100/720LS1118 EP type number : 0 413 508 102 Contr.-rod trav.mm: 13.20...13.30 Governor Governor design. : RQV300...1150MW56-2 Governer no. : 0 420 083 127 Del.quantity cm3/: 13.9...14.1 100H.: (13.7...14.3) Customer-spec. information Customer : KHD Dispersion cm3/:0.3: BF 8L 513 100H.: (0.6) Engine 1st version kW : 235.0 2nd speed 1/min: 300.0 1/min: 2300 Contr.-rod trav. m: 6.9...7.0 Speed Del.quantity cm3/: 1.3...1.7 100H.: (1.1...1.9) TEST BENCH REQUIREMENTS cm3/:0.3Dispersion Calibrating-oil inlet temp. °C 100H.: (0.5) : 38...42 (B) Setting of injection pump with Overflow valve externally-mounted governor : 1 417 413 000 SLEEVE TRAVELS 1st speed 1/min: 1200 Inlet press., bar : 1.50 Sleeve travel mm: 8.50...8.70 2nd speed 1/min: 1300 Calibrating nozzle-holder : 0 681 343 009 Sleeve travel mm: 9.80...10.20 assembly 3rd speed 1/min: 600 Sleeve travel mm: 3.90...4.50 Opening 4th speed 1/min: 300 pressure, bar : 172...175 Sleeve travel mm: 1.30...1.70 Test inj. tubing : 1 680 740 014 SLEEVE POSITION Control-lever position Degree: -1 1/min: 1200 Outside diameter x Wall thickness Speed x Length mm : 6.00x2.00x600 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version Speed 1/min: 1150 per values Charge press. hPa: 900
Del.quantity cm3/: 139.0...141.0
1000H.: (137.0...143.0)
Dispersion cm3/: 3.50 START OF DELIVERY Test pressure, bar: 30...32 1000H.: (6.00) Prestroke mm 3.10...3.20 : (3.05...3.25) Contr.-rod trav.mm: 9.00...12.00 HIGHEST RATED SPEED

K14

1st version Control-lever position degrees: 50...58 Testing: 1st c-rod trav.mm : 12.20 Speed 1/min : 1190...1200 2nd c-rod trav.mm : 4.00 1/min: 1305...1335 Speed 4th speed 1/min : 1370 C-rod trav.mm : 0.00...1.00 LOVEST RATED SPEED I Control-lever position degrees: 14...22 Setting point w/out aux. spring 1/min : 300 Speed Contr.-rod trav.mm: 6.9 Testing: Speed 1/min : 100 C-rod trav.mm min: 8.50 1/min : 300 Speed : 6.90...7.00 C-rod trav.mm CONSTANT REGULATION 1/min : 320...500 Speed TORQUE CONTROL Torque-control curve - 1st version t speed 1/min: 1150 C-rod trav.mm: 13.20...13.30 d speed 1/min: 750 1st speed 2nd speed C-rod trav.mm : 13.80...13.90 3rd speed 1/min: 900 C-rod trav.mm : 13.40...13.60 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 450 Contr.-rod trav.mm: 13.50...13.80 Measurement 1/min : 500 Speed 1st pressure hPa C-rod trav.mm : 12.20...12.30 2nd pressure hPa : 300 : 12.70...12.80 C-rod trav.mm 3rd pressure hPa : 900 : 13.80...13.90 C-rod trav.mm SWITCH-OVER POINT 1/min : 220 (250) Speed FUEL-DELIVERY CHARACTERISTICS

K15

1st version Charge press. hPa : 900 Speed 1/min: 750
Del.quantity cm3/: 146.0...148.0
1000H.: (144.0...150.0)
Dispersion cm3/: 5.00
1000H.: (7.00) Charge press. hPa : -Speed 1/min : 450 Del.quantity cm3/: 111.0...113.0 1000H.: (109.0...115.0)

STARTING FUEL DELIVERY

1/min : 100 Del.quantity cm3/: 140.0...150.0 1000H.: (137.0...153.0)

LOW IDLE

1/min : 300 Speed Contr.-rod trav.mm: 6.90...7.00 Del.quantity cm3/: 13.0...17.0 1000H.: (11.0...19.0) cm3/: 3.50Dispersion 1000H.: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column : MTU 47,5 H1 Test sheet Edition : 9.3.87 Superceeded Calibrating oil : ISO-4113 Combination no. : 0 406 030 002 Injection pump Pump designation : PE12ZWM160/12ORS2012 : 0 416 060 003 EP type number Governor Governor design. : RQUV300...1050ZWA65R Governer no. : 0 422 409 036 Customer-spec. information Customer : 12 V 396-03 Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 40...45 Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Calibrating nozzle-holder : 1 688 901 026 assembly ~ Opening pressure, bar : 220...223 Test inj. tubing : 1 680 750 016 Outside diameter x Wall thickness : 8.00x2.00x1500 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Prestroke mm : 2.50...2.60 : (2.45...2.65) Contr.-rod trav.mm: 12.0 Cam sequence : 12-9-4-5-8-11-2-3-10

-7-6-1

SD ang. spacing CS: 0-15-60-75-120-135-180-195-240-255-300-315 Tolerance + - 0 : 0.50(0.75) SD mark cyl. no. : 12 BASIC SETTING 1st speed 1/mi: 1000 Contr.-rod trav.mm: 18.00 Del.quantity cm3/: 63.0...64.4 100H.: 62.5...64.9 Dispersion cm3/:2.0100H.: (3.0) 2nd speed 1/min: 1000 Contr.-rod trav. m: 9.00
Del.quantity cm3/; 21.2...24.0
100H.: (20.7...24.5)
Dispersion cm3/: 2.8
100H.: (4.2)
3rd speed 1/min: 350 Contr.-rod trav.mm: 9.00 Del.quantity cm3/: 13.2...15.6 100H.: (12.7...16.1 Dispersion cm3/: 1.6 100H.: (2.4) SLEEVE POSITION Control-lever position Degree: 79...85 17min: 1050 Speed Cont.-rod travelmm: 18.00 HIGHEST RATED SPEED 1st version Control-lever position degrees: 79...85 Testing: 1st c-rod trav.mm : 18.00 Speed 1/min: 1050
2nd c-rod trav.mm: 17.00
Speed 1/min: 1055...1075
3rd c-rod trav.mm: 4.00 1/min : 1150...1210 Speed 4th speed 1/min : 1250 C-rod trav.mm : 0.00...2.00 SET IDLE CONTROL-LEVER

POSITION

Speed

K17

1/min : 300

Contr.-rod trav.mm: 8.00

Control-lever position degrees: 19...24

LOWEST RATED SPEED I Speed 1/min: 200 C-rod trav.mm: 10.80...14.20 C-rod trav.mm: 8.00

C-rod trav.mm : 8.00 Speed 1/min : 300 C-rod trav.mm : 0.01 Speed 1/min : 485...590

Remarks:
Stamp prestroke dimension into pump housing
Stamp dimension "0". Control-rod travel "0" corresponds to 1.0 mm clearance of the control-collar capsule from the end-face stop plate.

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1- 5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                   : CUM 8,3 B 1
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : 21.05.87
                   : 10.86
Calibrating oil : ISO-4113
                                                      SD mark cyl. no. : 1
                   : 9 400 083 451
Combination no.
                                                      START OF DELIVERY DIFFERENCE
Injection pump
Pump designation : PES6A100D320/3RS2691
                                                      betw.c-rod trav.mm: 9.00...12.00
Difference CS : 3.00...4.00
                    : 9 410 230 028
EP type number
Governor
                                                      BASIC SETTING
Governor design. : RQV350...1100AB1218R
Governer no.
                  : 9 420 080 214
                                                      1st speed
                                                                     1/mi: 1100
                                                      Contr.-rod trav.mm: 12.80...12.90
Customer-spec. information
                   : CUMMINS
Customer
                                                      Del.quantity cm3/: 11.9...12.1
                   : 6 CT/8.3 1
Engine
                                                                    100H.: (11.7...12.3)
1st version kW : 210.0
Speed
              1/min: 2200
                                                      Dispersion
                                                                    cm3/:0.3
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.6)
                                                      2nd speed 1/min: 350.0
Contr.-rod trav. m: 5.9...6.1
Del.quantity cm3/: 1.3...1.7
100H.: (1.0...1.9)
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                                                                    cm3/: 0.3
100H.: (0.5)
                    : 1 417 413 047
                                                      Dispersion
Inlet press., bar : 1.00
                                                      (B) Setting of injection pump with
                                                          externally-mounted governor
Calibrating nozzle-holder
             : 0 681 343 009
 assembly
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 1150
Sleeve travel mm: 8.50...8.60
Opening
 pressure, bar : 172...175
                                                      2nd speed 1/min: 350
                                                        Sleeve travel mm: 2.20...2.60
                                                                   1/min: 500
Test inj. tubing : 1 680 750 014
                                                      3rd speed
                                                        Sleeve travel mm: 3.60...3.90
                                                      4th speed 1/min: 800
Outside diameter
                                                        Sleeve travel mm: 5.30...5.60
x Wall thickness
               : 6.00x2.00x600
x Length mm
                                                      SLEEVE POSITION
                                                      Control-lever position
(A) Injection pump setting values
                                                                   Degree: -1
    Insp. values in parentheses
Set constant delivery quant.
                                                      Speed
                                                                    17min: 1140
                                                      Cont.-rod travelmm: 15.20...17.80
    per values
START OF DELIVERY
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Test pressure, bar: 25...27
                                                      1st version
Prestroke mm : 2.80...2.90
                                                      Speed
                                                                    1/min: 1100
                   : (2.75...2.95)
                                                      Charge press. hPa: 800
K18
```

```
Dei.quantity cm3/: 119.0...121.0
1000H.: (117.0...123.0)
Dispersion cm3/: 3.50
             1000H.: (6.00)
HIGHEST RATED SPEED
1st version
Centrol-lever
 position degrees: 59...67
Testing:
1st c-rod trav.mm : 11.80
Speed 1/min: 1140...1150
2nd c-rod trav.mm: 4.00
          1/min : 1240...1270
1/min : 1370
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 11...19
Testing:
Speed
            1/min : 100
C-rod trav.mm min : 9.00
            1/min : 350
Speed
                : 5.90...6.10
: 2.00
C-rod trav.mm
C-rod trav.mm
            1/min: 630...690
Speed
CONSTANT REGULATION
            1/min: 350...500
Speed
TORQUE CONTROL
Dimension a mm : 0.70
Torque-control curve - 1st version
1st speed 1/min : 1100
  C-rod trav.mm : 12.80...12.90
2nd speed 1/min: 700
  C-rod trav.mm : 13.50...13.60
3rd speed 1/min : 900
  C-rod trav.mm : 13.30...13.50
4th speed 1/min: 950
  C-rod trav.mm : 13.10...13.30
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 800
Contr.-rod trav.mm: 13.50...13.60
Measurement
            1/min : 500
Speed
1st pressure hPa : -
  C-rod travemm : 11.40...11.50
2nd pressure hPa : 575
K19
```

: 12.90...13.10 C-rod trav.mm 3rd pressure hPa : 475 C-rod trav.mm : 12.00...12.20

SWITCH-OVER POINT

Speed 1/min: 290 (310)

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa: 800

Speed 1/min: 700
Del.quantity cm3/: 125.5...128.5
1000H.: (123.0...131.0)
Charge press. hPa: 800

1/min: 900 Speed

Del.quantity cm3/: 128.5...131.5 1000H.: (126.0...134.0)

Charge press. hPa : -

1/min : 500 Speed Del.quantity cm3/: 86.0...88.0 1000H.: (84.0...90.0)

STARTING FUEL DELIVERY

Speed 1/min : 100 Del.quantity cm3/: 168.0...182.0 1000H.: (-) Contr.-rod trav.mm: 19.00...21.00

LOW IDLE

1/min : 350 Speed Contr.-rod trav.mm: 5.90...6.10 Del.quantity cm3/: 13.0...17.0 1000H: (10.5...19.5) cm3/: 3.50 1000H: (5.50)

Dispersion

Remarks: Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : CUM 8,3 A 5 Edition : 21.05.87 SD mark cyl. no. : 1 Superceeded START OF DELIVERY DIFFERENCE Calibrating oil : ISO-4113 betw.c-rod trav.mm: 9.00...12.00 Difference 0 CS : 3.00...4.00 Combination no. : 9 400 083 454 Injection pump Pump designation : PES6A100D320/3RS2691 BASIC SETTING EP type number : 9 410 230 025 Governor 1st speed 1/mi: 900 : RSV400...900A7C2209-Governor design. Contr.-rod trav.mm: 12.70...12.80 : 9 420 083 232 Governer no. Del.quantity cm3/: 12.9...13.0 Customer-spec. information 100H.: (12.7...13.2) Customer : CUMMINS Engine : 6 CT Dispersion cm3/:0.3TEST BENCH REQUIREMENTS 100H.: (0.6) Calibrating-oil inlet temp. °C 1/min: 400.0 2nd speed : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar : 1.00 SLEEVE POSITION Control-lever position Calibrating nozzle-holder : 0 681 343 009 assembly Degree: -3 17min: 800 Cont.-rod travelmm: 0.30...0.70 Opening pressure, bar : 172...175 Governor-spring reload Notch setting x : 5.00 Test inj. tubing : 1 680 750 014 FULL-LOAD DELIV, AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version x Length mm : 6.00x2.00x600 1/min: 900 Speed Del.quantity cm3/: 129.0...130.0 1000H.: (127.0...132.0) Dispersion cm3/: 3.50 1000H.: (6.00) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values HIGHEST RATED SPEED START OF DELIVERY 1st version Test pressure, bar: 25...27 Control-lever position degrees: 53...61 : 2.80...2.90 : (2.75...2.95) Prestroke mm Testing: Contr.-rod trav.mm: 9.00...12.00 1st c-rod trav.mm : 11.70 Speed 1/min : 940...950 Cam sequence : 1-5- 3- 6- 2- 4 2nd c-rod trav.mm : 4.00

K20

. .

```
1/min : 970...1000
  Speed
            1/min: 1100
4th speed
                  : 0.30...1.40
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 23...31
Setting point w/out aux. spring
           1/min : 400
Speed
Contr.-rod trav.mm: 5.5
Testing:
            1/min : 100
Speed
C-rod trav.mm min : 19.00
            1/min : 400
Speed
                 : 5.90...6.10
C-rod trav.mm
C-rod trav.mm
                  : 2.00
            1/min: 420...480
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 900
1st speed
  C-rod trav.mm
                : 12.70...12.80
2nd speed
            1/min : 500
  C-rod trav.mm : 12.70...12.90
5th speed 1/min: 400
  C-rod trav.mm : 13.70...14.30
FUEL-DELIVERY CHARACTERISTICS
            1/min : 500
Speed
Del.quantity cm3/: 115.0...118.0
            1000H.: (112.5...120.5)
STARTING FUEL DELIVERY
Speed
            1/min : 100
Del.quantity cm3/: 135.0...149.0
            1000H.: (132.0...152.0)
Contr.-rod trav.mm: 19.00...21.00
LOW IDLE
Speed 1/min: 400
Contr.-rod trav.mm: 5.90...6.10
Del.quantity cm3/: 16.5...20.5
            1000H.: (14.0...23.0)
cm3/: 3.50
Dispersion
            1000H.: (5.50)
Remarks:
APPLICATION
Generator
```

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.5(0.75) Note inst. in remarks column Test sheet : FOR 6,6 A 1 SD mark cyl. no. : 1 Edition : 6.87 Superceeded : 5.85 START OF DELIVERY DIFFERENCE Calibrating oil : ISO-4113 betw.c-rod trav.mm: 9.00...12.00 & c-rod trav max. : 21.00 Difference CS : 2.0...3.0 : 9 400 085 232 Combination no. Injection pump Pump designation : PES6A95D410RS2688 EP type number : 9 400 083 090 BASIC SETTING Governor 1st speed 1/mi: 1300 Governor design. : RQV350...1300AB1208L Governer no. : 9 420 080 185 Contr.-rod trav.mm: 12.10...12.20 Del.quantity cm3/ : 8.6...8.8 Customer-spec. information Customer : FORD 100H.: (8.4...9.0) Engine : 6.6 L TC cm3/: 0.35Dispersion TEST BENCH REQUIREMENTS 100H.: (0.6) Calibrating-oil inlet temp. °C : 38...42 1/min: 350 2nd speed Contr.-rod trav. m: 6.90...7.10 Del.quantity cm3/: 0.95...1.35 100H.: (0.7...1.6) Overflow valve : 1 417 413 000 cm3/: 0.35 100H.: (0.55) Dispersion Inlet press., bar : 1.0 Calibrating nozzle-holder (B) Setting of injection pump with : 0 681 343 009 externally-mounted governor assembly SLEEVE TRAVELS Opening pressure, bar : 172...175 1st speed 1/min: 300 Sleeve travel mm: 1.30...1.50 2nd speed 1/min: 500 Sleeve travel mm: 3.50...3.70 Test inj. tubing : 1 680 750 008 3rd speed 1/min: 1000 Sleeve travel mm: 5.90...6.10 Outside diameter 4th speed 1/min: 1345 x Wall thickness x Length mm : 6,00x2,00x600 Sleeve travel mm: 8.50...6.10 SLEEVE POSITION (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Control-lever position Degree: -1 1/min: 1345 per values Cont.-rod travelmm: 15.20...17.80 START OF DELIVERY FULL-LOAD DELIV. AT FULL-LOAD STOP Test pressure, bar: 25...27 Prestroke mm : 3.15...3.25 1st version Speed 1/min: 1300 Charge press. hPa: 500 Del.quantity cm3/: 86.0...90.0 1000H.: (84.0...90.0) : (3.10...3.30) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5--3-6-2-4

Dispersion cm3/ : 3.5 1000H.: (6.0) HIGHEST RATED SPEED 1st version Control-lever position degrees: 58...66 Testing: 1st c-rod trav.mm : 11.10 1/min: 1340...1350 Speed 2nd c-rod trav.mm : 4.00 1/min : 1460...1490 1/min : 1600 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 14...22 Testing: 1/min : 100 Speed C-rod trav.mm min : 10.00 1/min : 350 Speed C-rod trav.mm : 6.90...7.10 : 2.00 C-rod trav.mm 1/min : 670...730 Speed TORQUE CONTROL Dimension a mm : 0.70 Torque-control curve - 1st version 1st speed 1/min : 1300 C-rod trav.mm : 12.10...12.20 2nd speed 1/min: 600 C-rod trav.mm : 12.80...12.90 3rd speed 1/min: 800 : 12.60...12.80 C-rod trav.mm 4th speed 1/min: 900 : 12.40...12.70 C-rod trav.mm compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min: 500
Pressure hPa: 500
Contr.-rod trav.mm: 12.80...12.90 Measurement 1/min : 500 Speed 1st pressure hPa : -: 10.60...10.70 C-rod trav.mm : 400 2nd pressure hPa : 12.20....12.30 : 250 C-rod trav.mm 3rd pressure hPa : 11.00...11.20 C-rod trav.mm SWITCH-OVER POINT

K23

1/min : 290 (310) Speed

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa: 500

1/min : 600 Speed

Del.quantity cm3/: 83.0...86.0 1000H.: (80.5...88.5)

Charge press. hPa : 500 1/min : 800 Speed

Del.quantity cm3/: 86.0...89.0 1000H.: (83.5...91.5)

Charge press. hPa : -Speed 1/min : 600

Del.quantity cm3/ : 57.0...59.0

1000H.: (55.0...61.0)

STARTING FUEL DELIVERY

1/min : 100 Speed

Del.quantity cm3/: 115.0...125.0

1000H.: (-)

Contr.-rod trav.mm: 20.00...21.00

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : FOR 6,6 G Edition : 6.87 : 4.86 Superceeded Calibrating oil : ISO-4113

: 9 400 085 248 Combination no.

Injection pump

Pump designation : PES6A95D412RS2709 EP type number : 9 400 083 009

Governor

Governor design. : RQV350...1400AB1202-

Governer no. : 9 420 080 220

Customer-spec. information

Customer : FORD (FTO) Engine : 6,6 L NA

1st version kW : 106.7 Speed 1/min: 2800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.0

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

: 3.15...3.25 Prestroke mm

: (3.10...3.30)

Contr.-rod trav.mm: 9.00...12.00 Del.quantity cm3/: 79.0...80.0 1000H: (77.0..82.0) cm3/: 3.5 Cam sequence : 1-5-3-6-2-4 Dispersion 1000H.: (5.5) SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.5(0.75) HIGHEST RATED SPEED 1st version Control-lever SD mark cyl. no. : 1 position degrees: 60...66 START OF DELIVERY DIFFERENCE Testing: 1st c-rod trav.mm: 9.70 betw.c-rod trav.mm: 9.00...12.00 & c-rod trav max. : 21.00 Difference CS : 2.0...3.0 Speed 1/min: 1450...1460 2nd c-red trav.mm: 4.00 Speed 1/min: 1550...1580 th speed 1/min: 1720 C-rod trav.mm: 0.00...1.00 4th speed BASIC SETTING 1st speed 1/mi: 1400 LOWEST RATED SPEED I Control-lever Contr.-rod trav.mm: 10.70...10.80 position degrees: 10...18 Del.quantity cm3/ : 7.9...8.0 Testing: Speed 1/min: 100 C-rod trav.mm min: 9.00 100H.: (7.7...8.2) 1/min : 350 Speed C-rod trav.mm : 6.40...6.60 C-rod trav.mm : 2.00 Dispersion cm3/: 0.351/min : 560...620 100H.: (0.6) Speed 2nd speed 1/min: 350 Contr.-rod trav. m: 6.40...6.60 Del.quantity cm3/: 0.7...1.1 100H.: (0.5...1.3) Dispersion cm3/: 0.35 100H.: (0.55) SWITCH-OVER POINT 1/min : 290(310) Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 800 Del.quantity cm3/: 70.0...73.0 1000H.: (67.5...75.5) (B) Setting of injection pump with externally-mounted governor STARTING FUEL DELIVERY SLEEVE TRAVELS 1st speed 1/min: 350 Sleeve travel mm: 1.30...1.60 2nd speed 1/min: 700 1/min : 100 Speed Del.quantity cm3/: 112.0...122.0 1900H.: (-) Sleeve travel mm: 4.20...4.60 Contr.-rod tray.mm: 19.00...21.00 3rd speed 1/min: 1100 Sleeve travel mm: 6.10...6.40 4th speed 1/min: 1420 Sleeve travel mm: 8.50...8.60 LOW IDLE SLEEVE POSITION Control-lever position Degree: -1 Speed 17min: 1420 1000H.: (5.5) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP Remarks: 1st version 1/min: 1400 Speed

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Contr.-rod trav.mm: 9.00...12.00
                                                      Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                    : FOR 6,6 F
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.5(0.75)
                    : 6.87
Edition
Superceeded
                    : 3.86
                  : ISO-4113
Calibrating oil
                                                      SD mark cyl. no. : 1
                    : 9 400 085 258
Combination no.
                                                      START OF DELIVERY DIFFERENCE
injection pump
Pump designation : PES6A95D410RS2714
                                                      betw.c-rod trav.mm: 9.00...12.00
                                                      & c-rod tray max. : 21.00
Difference CS : 2.0...3.0
EP type number
                    : 9 400 084 001
Governor
                    : RQV375...1300AB1208-
Governor design.
                      1L
                                                      BASIC SETTING
Governer no.
                    : 9 420 080 219
                                                                    1/mi: 1300
                                                      1st speed
Customer-spec. information
                   : FORD (FTO)
Customer
                                                      Contr.-rod trav.mm: 12.10...12.20
                                                      Del.quantity cm3/ : 8.6...8.8
                    : 6,6 TC
Engine
                                                                     100H.: (8.4...9.0)
1st version kW : 121.4
              1/min: 2600
Speed
                                                      Dispersion
                                                                     cm3/:0.35
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.6)
Calibrating-oil inlet temp. °C
                                                      2nd speed 1/min: 375
Contr.-rod trav. m: 6.70...6.90
Del.quantity cm3/: 0.9...1.3
                    : 38...42
Overflow valve
                                                                     100H.: (0.7...1.6)
cm3/: 0.35
                    : 1 417 413 000
                                                      Dispersion
                                                                     100H.: (0.55)
Inlet press., bar : 1.0
                                                      (B) Setting of injection pump with
Calibrating nozzle-holder
           : 0 681 343 009
                                                           externally-mounted governor
 assembly
                                                      SLEEVE TRAVELS
Opening
 pressure, bar : 172...175
                                                      1st speed 1/min: 350
                                                         Sleeve travel mm: 1.30...1.60
                                                      2nd speed 1/min: 700
                                                      Sleeve travel mm: 4.10...4.50
3rd speed 1/min: 1100
Sleeve travel mm: 6.30...6.60
Test inj. tubing : 1 680 750 008
Outside diameter
                                                      4th speed 1/min: 1345
Sleeve travel mm: 8.50...8.60
x Wall thickness
                    : 6,00x2,00x600
x Length mm
                                                      SLEEVE POSITION
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Control-lever position
                                                                   Degree: -1
                                                                    1/min: 1345
    per values
                                                      Speed
                                                      Cont.-rod travelmm: 15.20...17.80
START OF DELIVERY
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Test pressure, bar: 25...27
Prestroke mm : 3.15...3.25
                                                      1st version
                    : (3.10...3.30)
                                                      Speed
                                                                    1/min: 1300
¥27
```

1000H.: (6.0) HIGHEST RATED SPEED 1st version Control-lever position degrees: 59...67 Testing: 1st c-rod trav.mm : 11.10 1/min : 1340...1350 Speed 2nd c~rod trav.mm : 4.00 1/min: 1450...1480 Speed 4th speed 1/min : 1600 : 0.00...1.00 S-rod trav.mm LOWEST RATED SPEED I Control-lever position degrees: 12...20 Testing: 1/min : 100 Speed C-rod trav.mm min: 10.00 Speed 1/min : 375 : 6.70...6.90 C-rod trav.mm C-rod trav.mm : 2.00 1/min: 650...710 Speed TORQUE CONTROL : 0.70 Dimension a mm Torque-control curve - 1st version 1st speed 1/min : 1300 C-rod trav.mm : 12.10...12.20 2nd speed 1/min: 600 : 12.80...12.90 C-rod trav.mm 3rd speed 1/min: 800 C-rod trav.mm : 12.60...12.80 4th speed 1/min: 900 C-rod trav.mm : 12.40...12.70 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 600 Contr.-rod trav.mm: 12.80...12.90 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.60...10.70 2nd pressure hPa : 400 : 12.20...12.30 C-rod trav.mm 3rd pressure hPa : 250

: 11.00...11.20 C-rod trav.mm SWITCH-OVER POINT 1/min : 290(310) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 600 1/min : 600 Speed Del.quantity cm3/: 83.0...86.0 1000H: (80.5...88.5) Charge press. hPa : 600 1/min: 800 Speed Del.quantity cm3/: 86.0...89.0 1000H.: (83.5...91.5) Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/ : 57.0...59.0 1000H.: (55.0...61.0)

## STARTING FUEL DELIVERY

Speed 1/min : 100 Del.quantity cm3/: 115.0...125.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test\_sheet : FOR 6,6 A 2 : 7.87 Edition Superceeded : 2.86 Calibrating oil : ISO-4113 Combination no. : 9 400 085 262 Injection pump Pump designation : PES6A95D41ORS2688 : 9 400 083 090 EP type number Governor Governor design. : RQV375...1300AB1208-Governer no. : 9 420 080 219 Customer-spec. information : FORD (FTO) Customer : 6,6 L TC Engine 1st version kW : 121.4 Speed 1/min: 2600 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 000 Inlet press., bar : 1.0 Calibrating nozzle-holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6,00x2,00x600 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_ START OF DELIVERY Test pressure, bai: 25...27

: 3.15...3.25 Prestroke mm : (3.10...3.30)

Charge press. hPa : 600
Del.quantity cm3/ : 86.0...88.0
1000H: (84.0...90.0)
Dispersion cm3/ : 3.5 Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 1000H.: (6.0) SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.5(0.75) HIGHEST RATED SPEED 1st version SD mark cyl. no. : 1 Control-lever position degrees: 59...67 START OF DELIVERY DIFFERENCE Testing: 1st c-rod trav.mm : 11.10 Speed 1/min : 1340...1350 2nd c-rod trav.mm : 4.00 Speed 1/min : 1450...1480 4th speed 1/min : 1600 betw.c-rod trav.mm: 9.00...12.00 & c-rod trav max. : 21.00 Difference CS : 2.0...3.0 BASIC SETTING C-rod tray.mm : 0.00...1.00 1st speed 1/mi: 1390 LOWEST RATED SPEED I Control-lever Contr.-rod trav.mm: 12.10...12.20 position degrees: 12...20 Del.quantity cm3/ : 8.6...8.8 Testing: 100H.: (8.4...9.0) 1/min : 100 Speed C-rod trav.mm min: 10.00 cm3/: 0.35 Speed 1/min : 375 Dispersion C-rod trav.mm : 6.70...6.90 C-rod trav.mm : 2.00 100H.: (0.60) 1/min : 650...710 Speed 2nd speed 1/min: 375 Contr.-rod trav. m: 6.70...6.90 TORQUE CONTROL Del.quantity cm3/ : 0.9...1.3 Dimension a mm : 0.70 100H.: (0.7...1.6) Torque-control curve - 1st version cm3/: 0.35 100H.: (0.55) 1st speed 1/min : 1300 Dispersion C-rod trav.mm : 12.10...12.20 2nd speed 1/min: 600 C-rod trav.mm : 12.80...12.90 3rd speed 1/min : 800 (B) Setting of injection pump with externally-mounted governor C-rod trav.mm : 12.60...12.80 4th speed 1/min : 900 SLEEVE TRAVELS 1st speed 1/min: 350 C-rod trav.mm : 12.40...12.70 Sleeve travel mm: 1.30...1.60 2nd speed 1/min: 700 compensator (LDA, ADA, ALDA) Steeve travel mm: 4.10...4.50
3rd speed 1/min: 1100
Steeve travel mm: 6.30...6.60 1st version 4th speed 1/min: 1345 Setting Sleeve travel inm: 8.50...8.60 1/min : 500 Speed ] Pressure hPa : 600 Contr.-rod trav.mm: 12.80...12.90 SLEEVE POSITION Control-lever position Degree: -1 Measur ement 1/min: 1345 1/min : 500 Speed Speed Cont.-rod travelmm: 15.20...17.80 1st pressure hPa : -FULL-LOAD DELIV. AT FULL-LOAD STOP C-rod trav.mm : 10.60...10.70 2nd pressure hPa : 400 C-rod trav.mm : 12.20...12.30 1st version 3rd pressure hPa : 250 1/min: 1300 Speed L02

```
C-rod trav.mm
                      : 11.00...11.20
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 600
Speed 1/min : 600
Del.quantity cm3/: 83.0...86.0
               1000H.: (80.5...88.5)
Charge press. hPa : 600
Speed 1/min : 800
Del.quantity cm3/: 86.0...89.0
1000H:: (83.5...91.5)
Charge press. hPa : -
               1/min : 600
Speed
Del.quantity cm3/: 57.0...59.0
1000H.: (55.0...61.0)
STARTING FUEL DELIVERY
Speed
               1/min : 100
Del.quantity cm3/: 115.0...125.0
1000H.: (-)
Contr.-rod trav.mm: 20.0...21.0
LOW IDLE
Speed
               1/min : 375
Contr.-rod trav.mm: 6.70...6.90
Del.quantity cm3/: 9.5...13.5
               1000H.: (7.0...16.0)
cm3/: 3.5
1000H.: (5.5)
Dispersion
```

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : VOL 10\_0 Q9 Edition : 21.05.87 Superceeded Calibrating oil : ISO-4113 Combination no. : 9 400 087 368 Injection pump Pump designation : PE6P110A320RS3108V EP type number : 0 411 816 737 Governor Governor design. Governer no. : RQV250...1100PA589-1 : 9 420 080 166 Customer-spec. information : VOLVO Customer Engine : THD 101 FD 1st version kW : 210.0 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. <sup>9</sup>C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test inj. tubing : 1 681 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values , , , Insp. values in parentheses Set constant delivery quant. per values \_\_\_\_

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.00...3.10

: (2.95...3.15)

2-

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-

1st version Control-lever SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) position degrees: 61...69 Testing: 1st c-rod trav.mm : 12.70 SD mark cyl. no. : 1 Speed 1/min: 1140...1150 2nd c-rod trav.mm : 4.00 BASIC SETTING Speed 1/min : 1220...1250 1st speed 1/mi: 700 3rd c-rod trav.mm : 4.00 4th speed 1/min: 1350 Contr.-rod trav.mm: 13.70...13.80 C-rod trav.mm : 0.00...1.00 Del.quantity cm3/ : 18.0...18.2 LOWEST RATED SPEED I Control-lever 100H.: (17.7...18.5) position degrees: 7...15 cm3/:0.4Dispersion -Testing: 1/min : 100 Speed 100H.: (0.7) C-rod trav.mm min : 6.70 1/min : 250 C-rod trav.mm : 5.40...5.60 2nd speed 1/min: 250 Contr.-rod trav. m: 5.4...5.6
Del.quantity cm3/: 3.2...3.6
100H.: (2.9...3.8)
Dispersion cm3/: 0.3
100H.: (0.6) C-rod trav.mm : 2.00 1/min: 345...405 Speed compensator (LDA, ADA, ALDA) (B) Setting of injection pump with 1st version externally-mounted governor Setting 1/min : 500 Speed hPa : 1200 SLEEVE TRAVELS Pressure 1st speed 1/min: 250
Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 370
Sleeve travel mm: 2.60...3.00
3rd speed 1/min: 430 Contr.-rod trav.mm: 13.70...13.80 Measurement 1/min : 500 Speed Sleeve travel mm: 3.50...3.90 1st pressure hPa : -4th speed 1/min: 1160 C-rod trav.mm : 9.80...9.90 Sleeve to avel mm: 8.10...8.30 2nd pressure hPa : 720 5th speed 1/min: 1210 Sleeve travel mm: 9.40...9.60 C-rod trav.mm : 12.80...12.90 3rd pressure hPa : 360 : 10.90...11.00 C-rod trav.mm SLEEVE POSITION Control-lever position FUEL-DELIVERY CHARACTERISTICS Degree: -1 Charge press. hPa : -17min: 1175 1/min : 700 Speed Speed Cont.-rod travelmm: 15.20...17.80 Del.quantity cm3/: 108.0...110.0 1000H.: (105.0...113.0) FULL-LOAD DELIV. AT FULL-LOAD STOP STARTING FUEL DELIVERY 1st version 1/min: 700 Speed Charge press. hPa : 1200 Del.quantity cm3/: 180.0...182.0 1000H.: (177.0...185.0) Dispersion cm3/: 4.00 1/min : 100 Del.quantity cm3/: 160.0...190.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00 1000H.: (7.50)

HIGHEST RATED SPEED

# LOW IDLE

# Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : VOL 10,0910
                    : 21.05.87
Edition
Superceeded
Calibrating oil : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no. : 9 400 087 369
                                                       BASIC SETTING
                                                                      1/mi: 700
Injection pump
                                                       1st speed
Pump designation : PE6P110A320RS3108Z
                  : 0 411 816 728
                                                       Contr.-rod trav.mm: 10.50...10.60
EP type number
Governor
Governor design. : RQV250...1100PA589-1
                                                       Del.quantity cm3/: 12.0...12.3
Governer no. : 9 420 080 166
                                                                     100H.: (11.8...12.6)
Customer-spec. information
Customer
                   : VOLVO
                                                       Dispersion
                                                                     cm3/:0.4
                    : THD 101 GB
                                                                     100H.: (0.7)
Engine
1st version kW : 161.0
                                                                     1/min: 250.0
                                                       2nd speed
                                                      Contr.-rod trav. m: 5.4...5.6
Del.quantity cm3/: 3.2...3.6
100H.: (-)
              1/min: 2200
Speed
TEST BENCH REQUIREMENTS
                                                                     cm3/: 0.3
100H.: (0.6)
                                                       Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                       (B) Setting of injection pump with
Overflow valve
                                                           externally-mounted governor
                    : 1 417 413 025
                                                       SLEEVE TRAVELS
                                                      1st speed 1/min: 250
Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 370
Sleeve travel mm: 2.60...3.00
Inlet press, bar : 1.50
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                                    1/min: 430
                 . . . . . . . . . . . . . . . .
                                                       3rd speed
Opening
                                                         Sleeve travel mm: 3.50...3.90
                                                       4th speed 1/min: 1160
pressure, bar : 172...175
                                                         Sleeve travel mm: 8.10...8.30
                                                       5th speed 1/min: 1210
Sleeve travel mm: 9.40...9.60
Test inj. tubing : 1 680 750 015
                                                       SLEEVE POSITION
Outside diameter
x Wall thickness
                                                       Control-lever position
                :: 6.00x1.50x600
                                                                    Degree: -1
x Length mm
                                                                     17min: 1175
                                                       Speed
                                                       Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                       1st version
                                                                     1/min: 700
START OF DELIVERY
                                                       Speed
                                                       Charge press. hPa : 750
Test pressure = bar: 25...27
                                                      Del.quantity cm3/: 120.0...123.0
Prestroke mm
                    : 3.00...3.10
                                                                    1000H.: (118.0...126.0)
: (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
                                                                    cm3/ : 4.00
1000H.: (7.50)
                                                       Dispersion
L07
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 52...60 Testing: 1st c-rod trav.mm : 9.50 1/min : 1140...1150 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1205...1235 3rd c-rod trav.mm : 4.00 4th speed 1/min : 1350 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...12 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.90 : 2,00 C-rod trav.mm 1/min : 350...410 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 hPa : 750 Speed Pressure Contr.-rod trav.mm: 10.50...10.60 Measurement Speed 1/min : 500 1st pressure hPa : -C-rod trav.mm : 9.60...9.80 2nd pressure hPa : 250 C-rod trav.mm : 10.30...10.40 3rd pressure hPa : 220 C-rod trav.mm : 10.00...10.20 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/ : 104.5...107.5 1000H.: (102.0...110.0) STARTING FUEL DELIVERY

Speed

L<sub>08</sub>

1/min : 100

Del.quantity cm3/: 160.0...190.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

1/min : 250 Speed Contr.-rod trav.mm: 5.40...5.60 Del.quantity cm3/: 32.0...36.0 1000H:: (-) Dispersion cm3/: 3.00

1000H.: (6.00)

Delivery-valve spring pre-tension = 2.40...2.60 mm. Permissible alteration from 2.20...2.90

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.5(0.75)
Test sheet
                    : SCA 11,0 V7
Edition
                    : 6.87
Superceeded
Calibrating oi! : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no. : 9 400 087 370
                                                       BASIC SETTING
Injection pump
                                                                       1/mi: 900
                                                        1st speed
Pump designation : PE6P12OA72ORS7004
EP type number
                  : 0 412 626 801
                                                        Contr.-rod trav.mm: 12.80...12.90
Governor
Governor design. : RSV350...900P7/481
Governer no. : 9 420 082 320
                                                       Del.quantity cm3/: 20.8...21.0
                                                                      100H.: (20.5...21.3)
Customer-spec, information
                    : SAAB-SCANIA
                                                                      cm3/:0.6
Customer
                                                       Dispersion
                    : DS 11
                                                                      100H.: (0.9)
Engine
TEST BENCH REQUIREMENTS
                                                                      1/min: 350
                                                       2nd speed
                                                       Contr.-rod trav. m: 5.40...5.60

Del.quantity cm3/: 1.2...1.8

100H.: (0.9...2.1)

Dispersion cm3/: 0.8

100H.: (1.2)
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                     : 1 417 413 025
                                                       SLEEVE POSITION
Inlet press., bar : 1.50
                                                       Control-lever position
                                                                     Degree: -3
                                                                      17min: 800
                                                       Speed
Calibrating nozzle-holder
                                                       Cont.-rod travelmm: 0.30...1.40
 assembly
               : 1 688 901 019
Opening
                                                       Governor-spring reload
 pressure, bar : 207...210
                                                       Notch setting x : 6.00
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
                    : 0,8
 diameter mm
                                                       1st version
                                                                      1/min: 900
                                                       Speed
Test inj. tubing : 1 680 750 015
                                                       Del.quantity cm3/: 208.0...210.0
                                                                     1000H.: (205.0...213.0)
cm3/ : 6.0
1000H.: (9.0)
Outside diameter
                                                       Dispersion
x Wall thickness
x Length mm
                : 6,00x1,50x600
                                                       HIGHEST RATED SPEED
(A) Injection pump setting values
                                                       1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                       Control-lever
                                                        position degrees: 46...54
    per values ____
                                                       Testing:
                                                       1st c-rod trav.mm : 11.80
Speed 1/min : 920...925
2nd c-rod trav.mm : 4.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                                    1/min : 960...970
                    : 5.00...5.10
                                                         Speed
Prestroke mm
                    : (4.95...5.15)
                                                       4th speed 1/min: 1050
Contr.-rod trav.mm: 9.00...12.00
                                                        C-rod trav.mm : 0.30...1.70
L09
```

LOWEST RATED SPEED I

Control-lever

position degrees: 16...24 Setting point w/out aux. spring 1/min : 350 Speed

Contr.-rod trav.mm: 4.00 Speed 1/min: 350

C-rod trav.mm : 4.40...4.60 C-rod trav.mm : 2.00 Speed 1/min : 400...460

### STARTING FUEL DELIVERY

Speed 'min : 100

Del.quantity 33/: 240.0...290.0 1000H.: (-) Contr.-rod trav.mm: 20.00...21.00

LOW IDLE

Speed 1/min : 350

Contr.-rod trav.mm: 4.40...4.60

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm Because of flattening, set the spring preload on new delivery-valve holders to 3.0...3.1 mm.

Screw in torque-control-spring retainer to make contact at 500 l/min.

**APPLICATION** Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 900 1st speed Test sheet : DEE 10.1 A7 : 4.3.87 Edition Contr.-rod trav.mm: 11.60 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 16.0...16.2 Combination no. : 9 400 231 008 100H.: (-) Injection pump Dispersion cm3/:0.4Pump designation : PES6P110A72ORS370 100H.: (~) Governor : RSV500...900PO/452DR Governor design. 1/min: 500 2nd speed Contr.-rod trav. m: 6.00 Customer-spec. information Del.quantity cm3/: 19.0...25.0 100H.: (-) : JOHN DEERE Customer : 6619 T Engine SLEEVE POSITION TEST BENCH REQUIREMENTS Control-lever position Degree: -3 1/min: 800 Calibrating-oil inlet temp. <sup>BC</sup> Speed : 38...42 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Overflow valve : 1 457 413 010 1st version Inlet press., bar : 1.5 1/min: 900 Speed Del.quantity cm3/: 160.0...1141.0 1000H.: (157.0...165.0) Calibrating nozzle-holder : 0 681 343 009 assembly HIGHEST RATED SPEED Opening 1st version pressure, bar : 172...175 Control-lever position degrees: 38...46 Test inj. tubing : 1 680 750 015 Testing: 1st c-rod trav.mm : 10.60 Speed 1/min : 945...955 Outside diameter 2nd c-rod trav.mm : 6.20 x Wall thickness : 6.00x1.50x600 Speed 1/min: 985...1015 x Length mm 3rd c-rod trav.mm : 0.30...1.70 1/min : 1100 (A) Injection pump setting values Speed Insp. values in parentheses Set constant delivery quant. LOWEST RATED SPEED I Control-lever per values position degrees: 21...29 START OF DELIVERY Testing: Prestroke mm : 2.75...2.85 1/min : 500 Speed : (2.70...2.90) C-rod trav.mm min : 5.50 Contr.-rod trav.mm: 11.60 C-rod trav.mm : 2.00 Cam sequence : 1-5-3-6-2-4 Speed 1/min : 610...670 TORQUE CONTROL Torque-control curve - 1st version SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) 1/min : 900 1st speed C-rod trav.mm : 11.60

L11

```
2nd speed 1/min: 700
  C-rod trav.mm : 12.10...12.30
3rd speed 1/min: 650
  C-rod trav.mm : 12.45...12.55
4th speed 1/min: 500
  C-rod trav.mm : 12.80
SWITCH-OVER POINT
             1/min: 400...750
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 650
Del.quantity cm3/: 176.5...179.5

1000H.: (173.5...182.5)

Speed 1/min: 550

Del.quantity cm3/: 135.0...141.0

1000H.: (132.0...144.0)
STARTING FUEL DELIVERY
HIGH IDLE
              1/min : 1000
Speed
Del.quantity cm3/: 47.0...57.0
1000H.: (-)
LOW IDLE
              1/min : 500
Speed
Del.quantity cm3/: 190.0...250.0
1000H.: (-)
Remarks:
                     : JOHN DEERE NO. AR
                     : 88764
```

BOSCH INJ. PUMP TEST SPECIFICATIONS 270-315-Tolerance + - 0 : 0.50(0.75)Note inst. in remarks column BASIC SETTING : IHC 9.4 A 6 : 11.3.87 Test sheet Edition 1/mi: 1300 1st speed Superceeded : ISO-4113 Calibrating oil Contr.-rod trav.mm: 11.20 Combination no. : 9 400 231 103 Del.quantity cm3/: 12.7...12.9 Injection pump 100H.: (-) Pump designation : PES8P100A921/5RS286 Governor Dispersion cm3/:0.4: RQV350...1300PA624K Governor design. 100H.: (-) Customer-spec. information Customer : IHC 1/min: 350 2nd speed Contri-rod trav. m: 5.00 Engine : DVT 800 Del.quantity cm3/: 1.9...2.3 100H.: (-) cm3/: 0.5 100H.: (-) TEST BENCH REQUIREMENTS Dispersion Calibrating-oil inlet temp. °C SLEEVE POSITION inlet temp. : 38...42 Control-lever position Overflow valve Degree: 63...67 1/min: 1320 : 1 417 413 040 Speed Cont.-rod travelmm: 15.00...17.50 Inlet press., bar : 2.8 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 1 688 901 017 assembly 1st version 1/min: 1300 Speed Opening Charge press. hPa : 1200 Del.quantity cm3/: 127.0...129.0 1000H.: (-) : 207 pressure, bar Test inj. tubing : 9 681 230 713 HIGHEST RATED SPEED 1st version Control-lever Outside diameter position degrees: 59...65 x Wall thickness : 6.35x1.70x1001 x Length mm Testing: 1st c-rod trav.mm: 10.20 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1350...1360 Speed 2nd c-rod trav.mm : 4.00 per values 1/min : 1450...1480 Speed 3rd c-rod trav.mm : 0...1.00 1/min : 1650 START OF DELIVERY Speed Prestroke mm : 2.75...2.95 LOWEST RATED SPEED I : (2.70...3.00) Control-lever Contr.-rod trav.mm: 10.50 position degrees: 10...15 Cam sequence : 1-8-4-2-7-3-6-5 Testing: 1/min : 350 Speed C-rod trav.mm min : 5.10 Speed 1/min : 100 SD ang. spacing CS: 0-45-90-135-180-225-: 7.40...8.70 C-rod trav.mm

```
C-rod trav.mm
                  : 2.00
            1/min: 540...600
Speed
C-rod trav.mm
            1/min : 400...470
Speed
TORQUE CONTROL
Torque-control curve - 1st version
            1/min: 1300
1st speed
                  : 11.20
  C-rod trav.mm
            1/min : 900
2nd speed
 C-rod trav.mm : 10.80...10.90
3rd speed 1/min: 700
                 : 10.20...10.30
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1200
Speed
             1/min : 900
Del.quantity cm3/: 119.0...125.0
            1000H.: (-)
Charge press. hPa : -
Speed 1/min: 800
Del.quantity cm3/: 83.0...91.0)
1000H.: (-)
STARTING FUEL DELIVERY
HIGH IDLE
1st version
Charge press. hPa : 1200
Speed 1/min : 1505
Contr.-rod trav.mm: 4.00
LOW IDLE
            1/min : 350
Speed
Del.quantity cm3/: 190.0...230.0
1000H.: (-)
Delivery-valve spring pre-tension =
2.40...2.60 mm.
Permissible alteration from 2.20...2.90
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : SOF 2,5 G1 : 06.07.87 Edition replaces Calibrating oil : ISO 4113 : VE 3/10F1250 R129 Injection pump : 0 460 403 007 Type number Customer-specific information Customer : SOFIM - IVECO : 8135.61.200 Engine TEST BENCH REQUIREMENTS Calibrating-oil C return temp. with thermometer : 40...48 : 42...50 electronically Inlet press., bar : 0,35 Calibrating nozzle-holder : 1 688 901 000 assembly Opening bar : 147...150 pressure Test inj. tubing : 1 680 750 017 Outside diameter x Wall thickness mm : 840 x Length Start of delivery mm : 0,2 Prestroke (from BDC): +-0.02(0.04)Injection-pump setting values Test specifications in parentheses Timing-device travel: 1/min: 1250 Setting value mm: 3,1...3,5 Supply-pump pressure: Speed 1/min: 1250 Setting value bar: 4,5...5,1 Full-load del. w/out charge press.: Speed 1/min : 1250

L15

Del.quantity cm3/ 1000H.: 42.5...43.5 cm3/: 3,0 Dispersion 1000H.: (3.5) Low-idle speed regulation: 1/min: 400 Del.quantity cm3/ 1000H.: 11.0...15.0 Dispersion cm3/: 2.5 1000H.: (3.0) Full-load speed regulation: Speed 1/min: 1450 Del.quantity cm3/ 1000H: 9,5...15,5 Start: Speed 1/min: 100 Del.quantity cm3/1000H.: 42.0 mind Load-dependent start of delivery: Speed 1/min: 1250 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1st speed 1/min: 800 mm: 0,7...1,5 mm: (0,4...1,8) 1/min: 1000 TD travel 2nd speed mm: 1,7...2,3 mm: (1,3...2,7) 1/min: 1250 TD travel 3rd speed TD travel mm: mm: (2,6...4,0)Supply-pump pressure characteristic: 1st speed 1/min: 600 Supply-pump bar: 2,3...2,9 pressure 2nd speed 1/min: 1000 Supply-pump bar: 3,7...4,3 pressure Overflow quantity at overflow valve: 1/min: 600 1st speed : 55...138 Oveflow cm3/10s: (40...153) quantity 1/min: 1250 2nd speed

```
: 55...138
Overflow
 quantity cm3/10s: (40...153)
Delivery-quant. and breakaway char.:
1st speed 1/min: 1500
Del.quantity cm3/: 0,0...2,5
1000H.: -
               1/min: 1450
2nd speed
                cm3/: -
Del.quantity
              1000H.: (8,5...16,5)
               1/min: 1400
3rd speed
Del.quantity cm3/: 24,0...30,0
1000H.: (23,0...31,0)
                1/min: 1250
4th speed 1/min: 1000
1000H:: (40,8...45,2)
5th speed 1/min: 1000
4th speed
Del.quantity cm3/: 39.0...41.0
1000H.: (37.8...42.2)
               1/min: 600
6th speed
Del.quantity cm3/: 31.0...34.0
1000H.: (29,5...35,5)
Zero delivery (stop):
Mech. shutoff:
               1/min: 1250
Speed
Del.quantity cm3/: -
              1000H.: -
Idle delivery:
Mfg. date: until :-
              1/min: 400
1st speed
Del.quantity cm3/: -
              1000H.: (9,0...17,0)
               1/min: 450
2nd speed
Del.quantity cm3/: 3.0...9.0
1000H.: (2.0...10.0)
               1/min: 500
3rd speed
Del.quantity cm3/: 0,0...2,5
1000H.: -
Automatic starting fuel delivery:
1st speed
               1/min: 350
Del.quantity cm3/: -
               1000H: 42_0
 ind.
2nd speed
               1/min: 450
Del.quantity cm3/: -
               1000H: 40,0
 ax.
Mounting and assembly dimensions:
Designation
                mm
                     5,9...6,2
KF
                mm
MS
                    : 1,4..1,65
                mm
SVS max.
                     : 2,6
                mm
```

L16

Note inst. in remarks column

Test sheet : CAS 2.5 A Edition : 16.07.87 replaces : -

replaces : -Calibrating oil : ISO 4113

Injection pump : VE 3/10F1025 R276 Type number : 0 460 403 010

Customer-specific information Customer : CASE

Engine : D 155/433

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening

pressure bar : 172...175

Perforated-plate

diameter mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800

Setting value mm: 2,2...2,6

Supply-pump pressure:

Speed 1/min: 800

Setting value bar: 4,2...4,8

Full-load del. w/out charge press.:

Del.quantity cm3/ 1000H.: 60,061,0	Del.quantity cm3/: 0,03,0 1000H.: -
Dispersion cm3/: 2,5	2nd speed 1/min: 1170
1000H.: (\$,5)	Del.quantity cm3/: 0,010,0 1000H.: -
Low-idle speed regulation:	3rd speed 1/min: 1120 Del.quantity cm3/: 10,040,0
Speed 1/min: 350	1000H.: -
Del.quantity cm3/	4th speed 1/min: 1090
1000H.; 13,017,0	Del.quantity cm3/: -
Dispersion cm3/: 2.5	1000H.: (35,544,5)
1000H.: (3,5)	5th speed 1/min: 1000
Full-load speed regulation:	Del.quantity cm3/: 60,563,5 1000H.: (59,564,5)
	1000H.: (59,564,5)
Speed 1/min: 1090	6th speed 1/min: 800
Del.quantity cm3/	Deliquantity cm3/: -
1000H: 37,043,0	Del.quantity cm3/: - 1000H.: (58,262,8)
	7th speed 1/min: 500
Start:	Del.quantity cm3/: 56,060,0
	1000H.: (55,061,0)
Speed 1/min: 100	
Del.quantity : -	Zero delivery (stop):
mind cm3/1000H.: 75,0	шого почтогу почори
	Mech. shutoff:
Tornaction-cump test sessifications	Speed 1/min: 1000
Inspection-pump test specifications	
Test specifications in parentheses	Del.quantity cm3/: 03
	1000H.: -
	* 41 a 1 a 1 to
Timing-device characteristic:	Idle delivery:
	***
1st speed 1/min: 600	Mfg. date: until : -
TD travel mm: 0,71,5	1st speed 1/min: 350
mm: (0,4,1,8)	Deliquantity cm3/: -
2nd speed 1/min: 800	1000H.: (11,015,0)
TD travel mm: -	2nd speed 1/min: 450
mm: $(1,7,3,1)$	Del.quantity cm3/: 0,04,0
3rd speed 1/min: 1000	1000H.: -
TD travel mm: 3,54,3	
mm: (3,24,6)	Automatic starting fuel delivery:
Supply-pump pressure characteristic:	1st speed 1/min: 350
tapper, pamp p. cood. c cho. co co. rector	Del.quantity cm3/: -
1st_speed 1/min: 500	ind. 1000H: 70,0
	100011, 1070
Supply-pump	2nd speed 1/min: 450
pressure: bar: 3.03.6	
2nd speed 1/min: 1000	Del.quantity cm3/: - ax. 1000H: 70,0
Supply-pump	ax. 1000H: 70,0
pressure bar: 5,05,6	Chutaff alasta
	Shutoff electromagnet:
Overflow quantity at overflow valve:	0. A. *-
	Cut-in
1st speed 1/min: 500	min. voltage : -
Oveflow : 4183	Rated voltage : -
quantity cm3/10s: (2698)	
2nd speed 1/min: 1000	Mounting and assembly dimensions:
Overflow : 55138	•
quantity cm3/10s: (40153)	Designation
apart 1	K mm : 3,23,4
Delivery-quant. and breakaway char.:	KF mm : 5,25,5
1st speed 1/min: 1200	MS mm : 1,21,45
TO OPOCO TAMENTA TOO	

SVS max. XK XL

mm : 4,6 mm : 20,2...22,2 mm : 8.6...12,0

Note inst. in remarks column

Test sheet : CAS 2,5 B Edition replaces : 16.07.87

Calibrating oil : ISO 4113

Injection pump : VE 3/10F1100 R276-1 Type number : 0 460 403 011

Customer-specific information

Customer

: D 155/533/385 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening

pressure bar : 172...175

Perforated-plate

diameter mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 × Length mm: 840

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800

Setting value mm: 2,2...2,6

Supply-pump pressure:

1/min: 800 Speed

Setting value bar: 3,9...4,5

Full-load del. w/out charge press.:

Del.quantity cm3/ 1 1000H.: 66,067,0	Del.quantity cm3/: 0,03,0 1000H.: -
Dispersion cm3/: 2,5 1000H.: (3,5)	2nd speed 1/min: 1230 Del.quantity cm3/: 0,010,0 1000H.: -
Low-idle speed regulation:	3rd speed 1/min: 1180 Del.quantity cm3/: 10,040,0
Speed 1/min: 350 I Del.quantity cm3/	1000H.: - 4th speed 1/min: 1150
1000H.: 13.017.0 I Dispersion cm3/: 2.5	Del.quantity cm3/: - 1000H.: (45,554,5)
1000H.: (3,5)	5th speed 1/min: 1050
Full-load speed regulation:	Del.quantity cm3/: 67.271.2 1000H.: (66.271.2)
Speed 1/min: 1150	6th speed 1/min: 800 Del.quantity cm3/: - 1000H.: (64,268,8)
	7th speed 1/min: 500
Start:	Del.quantity cm3/: 59,063,0 1000H.: (58,064,0)
Speed 1/min: 100	Zero delivery (stop):
Del.quantity : - I mind cm3/1000H.: 75,0 I	Zero decreery (scop):
Increation rough test specifications	Mech. shutoff:
Inspection-pump test specifications   Test specifications in parentheses	Speed 1/min: 1100 Del.quantity cm3/: -
	1000Н.: -
Timing-device characteristic:	Idle delivery:
1st speed 1/min: 600	Mfg. date: until : -
TD travel mm: 0.81.6   mm: (0.51.9)	1st speed 1/min: 350 Del.quantity cm3/: -
2nd speed 1/min: 800	1000H.: (11,015,0)
TD travel mm: -	2nd speed 1/min: 450 Del.quantity cm3/: 0,04,0
3rd speed 1/min: 1050	1000H.: -
TD travel mm: 3,64,4	Automobie etechine final delineria
mm: (3,4,7)	Automatic starting fuel delivery:
Supply-pump pressure characteristic:	1st speed 1/min: 350 Del.quantity cm3/: -
1st speed 1/min: 500	ind. 1000H: 80,0
Supply-pump	2nd speed 1/min: 450
2nd speed 1/min: 1050	Del.quantity cm3/: -
Supply-pump   pressure bar: 4,95,5	ax. 1000H: 80,0
	Shutoff electromagnet:
Overflow quantity at overflow valve:	Cut-in
1st speed 1/min: 500	min. voltage : -
Oveflow : 4183   quantity cm3/10s: (2698)	Rated voltage :=
2nd speed 1/min: 1050	Mounting and assembly dimensions:
Overfl :: 55138   quantity cm3/10s: (40153)	Designation
quarterty cast to the state of	K mm : 3,23,4
Delivery-quant. and breakaway char.:	KF mm: 5,35,5
1st speed 1/min: 1250	MS mm : 1,21,45

SVS max. XK XL

mm : 4,3 mm : 20,2...22,2 mm : 10,0...13,4

Note inst. in remarks column

Test sheet : CAS 2,5 C Edition replaces : 16.07.87

Calibrating oil : ISO 4113

Injection pump : VE 3/10F1090 R276-2

Type number : 0 460 403 012

Customer-specific information

Customer : CASE

: D 179/633 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

: 1 688 901 020 assembly

Opening

bar : 172...175 pressure

Perforated-plate

diameter mm : 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm: 840

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

1/min: 230 Speed

Setting value mm: 4,8...5,2

Supply-pump pressure:

Speed 1/min: 800

Setting value bar: 4,2...4,8

Full-load del. w/out charge press.:

```
Del.quantity cm3/
                                                      Del.quantity cm3/: 0,0...3,0
1000H.: -
             1000H.: 73,3...74,3
cm3/: 2,5
1000H.: (3,5)
Dispersion
                                                                    1/min: 1225
                                                      2nd speed
                                                      Del.quantity cm3/: 0,0...10,0
1000H.: -
                                                                    1/min: 1175
Low-idle speed regulation:
                                                      Del.quantity cms/...
1000H.: -
                                                      3rd speed
                                                                     cm3/: 10,0...40,0
Speed
              1/min: 400
Del.quantity
               cm3/
                                                                    1/min: 1145
                                                      4th speed
                                                      Del.quantity cm3/: -
1000H.: (43,5...52,5)
             1000H.: 18,0...22,0
             cm3/: 2.5
1000H.: (3.5)
Dispersion
                                                                     1/min: 1050
                                                      5th speed
                                                      Del.quantity cm3/: 76,5...79,5
1000H.: (75,5...80,5)
Full-load speed regulation:
                                                                    1/min: 800
Speed
              1/min: 1145
                                                      6th speed
                                                      Del.quantity cm3/: -
1000H.: (71,5...76,1)
Del.quantity cm3/
              1000H: 45,0...51,0
                                                                    1/min: 500
                                                      7th speed
                                                      Del.quantity cm3/: 70,5...74,5
Start:
                                                                   1000H.: (69,5...75,5)
              1/min: 100
Speed
Del.quantity
                                                      Zero delivery (stop):
mind cm3/1000H.: 60,0
                                                      Mech. shutoff:
Inspection-pump test specifications
                                                      Speed
                                                                    1/min: 1050
                                                      Del.quantity cm3/: -
Test specifications in parentheses
                                                                   1000H.: -
Timing-device characteristic:
                                                      Idle delivery:
1st speed
              1/min: 500
                                                      Mfg. date: until : -
              mm: 2,4...3,2
mm: (2,1...3,5)
1/min: 800
TD travel
                                                                  1/min: 400
                                                      ist speed
                                                      Del.quantity cm3/: -
1000H.: (16,0..24,0)
2nd speed
TD travel
                                                                    1/min: 550
                 mm:
                                                      2nd speed
                 mm: (4,3...5,7)
                                                      Del.quantity cm3/: 0,0...4,0
1000H.: -
              1/min: 1050
3rd speed
                 mm: 6,1...6,9
mm: (5,8...7,2)
TD travel
                                                      Automatic starting fuel delivery:
                                                                    1/min: 350
Supply-pump pressure characteristic:
                                                      1st speed
                                                      Del.quantity
                                                                    cm3/: -
              1/min: 500
                                                                    1000H: 80,0
                                                       ind.
1st speed
Supply-pump
                bar: 3,1...3,7
 pressure
                                                                    1/min: 450
                                                      2nd speed
2nd speed
              1/min: 1050
                                                      Del.quantity cm3/: -
                                                                    1000H: 80,0
Supply-pump
                                                       ax.
                bar: 5,1...5,7
 pressure
                                                      Shutoff electromagnet:
Overflow quantity at overflow valve:
                                                      Cut-in
1st speed
              1/min: 500
                                                       min. voltage
Oveflow
                    : 41...83
                                                      Rated voltage
           cm3/10s: (26...98)
 quantity
             1/min: 1050
                                                      Mounting and assembly dimensions:
2nd speed
Overflow
                   : 55...138
 quantity cm3/10s: (40...153)
                                                      Designation
                                                                          : 3,2...3,4
                                                      K
                                                                     mm
                                                                          : 5,2...5,5
                                                      KF
                                                                     mm
Delivery-quant. and breakaway char.:
1st speed 1/min: 1300
                                                      MS
                                                                          : 1,7..1,95
                                                                     mm
```

L24

SVS max. mm : 2,1 Remarks:

Note inst. in remarks column

Test sheet : FIA 1.7 H1 Edition : 14.07.87 replaces : 18.12.86 Calibrating oil : ISO 4113

Injection pump : VE 4/10F2050 R192 Type number : 0 460 404 040

Customer-specific information Customer : IVECO-SOFIM

Engine : 8144.91.200

TEST BENCH REQUIREMENTS

Calibrating-oil C return temp.

with thermometer : 40...48 electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening |

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm : 840 x Length

Start of delivery

mm : 0,3 Prestroke

(from BDC): +-0,02(0,04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500 Charge press. hPa: 800 Setting value mm: 6,6...7,0

Supply-pump pressure:

Speed 1/min: 1500 Charge press. hPa: 800 Setting value bar: 6,6...7,2

Full-load del. with charge press.:

1/min: 600 1st speed Charge press. hPa: 800 1/min: 1500 Speed Charge press. hPa: 800
Del.quantity cm3/
1000H: 56,0...57,0
Dispersion cm3/: 3,0
1000H: (3,5) Supply-pump bar: 4,1...4,7 1/min: 2050 pressure 2nd speed hPa: 800 Charge press. Supply-pump pressure bar: 8,2...8,8 Full-load del. w/out charge press.: Overflow quantity at overflow valve: 1/min : 600 Speed Del.quantity cm3/ 1/min: 600 1st speed Charge press. hPa: 800 1000H.: 43,5...44,5 Oveflow : 41...83 quantity cm3/10s: (26...98) 2nd speed 1/min: 2050 Low-idle speed regulation: Charge press. hPa: 800 Speed 1/min: 400 Charge press. hPa: -Overflow : 55...138 quantity cm3/10s: (40...153) cm3/ Deliquantity 1000H.: 9,0...13,0 cm3/: 3,0 1000H.: (3,5) Dispersion Delivery-quant. and breakaway char.: 1/min: 800 1st speed Charge-air pressure-setting Full-load speed regulation: point hPa: 250 LDA stroke Speed 1/min: 2250 mm: 4,5 Del.quantity cm3/: -1000H.: (49.5...54.5) 2nd speed 1/min: 2400 Charge press. hPa: 800 Deliquentity cm3/ 1000H: 34,5...40,5 2nd speed Charge press. hPa: 800
Del.quantity cm3/: 0,0...3,0
1000H.: -Start: 1/min: 2350 1/min: 100 Speed 3rd speed Charge press. hPa: 800 Del.quantity cm3/: 1.5...8.5 1000H.: (1.0...9.0) Del.quantity cm3/1000H.: 44,0 mind 1/min: 2250 Load-dependent start of delivery: 4th speed Charge press. hPa: 800
Del.quantity cm3/: 1000H.: (33,5...41,5)
5th speed 1/min: 2050 Speed 1/min: 1500 Inspection-pump test specifications Charge press. hPa: 800
Del.quantity cm3/: 48,5...51,5
1000H.: (47,8...52,2) Test specifications in parentheses 1/min: 1500 Timing-device characteristic: 6th speed Charge press. hPa: 800
Del.quantity cm3/: 1000H.: (54,5...58,5) 1/min: 600 1st speed Charge press. hPa: 800 mm: 2,1...2,9 mm: (1,8...3,2) 1/min: 600 1D travel 7th speed Charge press. hPa: -Deliquentity cm3/: -1000H.: (41,5...46,5) 1/min: 1500 2nd speed Charge press. hPa: 800 TD travel mm : mm: (6,3...7,3) 1/min: 2050 Zero delivery (stop): 3rd speed Charge press. hPa: 800 Electr. shutoff: 1 in: 400 mm: 7,8...8,6 mm: (7,5...8,9) TD travel Speed ELAB .olt: -Del.quantity cm3/: 0,0...3,0 max. 1000H.: -Supply-pump pressure characteristic:

```
Idle delivery:
Mfg. date: until
1st speed
             1/min: 400
Del.quantity cm3/: -
             1000H.: (7,0...15,0)
              1/min: 450
2nd speed
Del.quantity cm3/: 1.5...6.5
1000H.: (0,0...8,0)
Automatic starting fuel delivery:
1st speed
              1/min: 450
Del.quantity cm3/: -
              1000H: 47,0
ind.
2nd speed
              1/min: 500
Del.quantity cm3/: -
              1000H: 42,0
Shutoff electromagnet:
Cut-in
                   : 10,0
min. voltage
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
               mm
KF
                   : 5,7...6,0
               mm
MS
               man
```

: 1,2...1,4 : 2,2 : 17,0...19,0 : 11,4...14,8 SVS max. XK mm XL mm

#### Remarks:

Correction at adjusting nut (46)

Del.quantity cm3/ BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1000H.: 66,0...67,0 Dispersion cm3/:3.0Note inst. in remarks column 1000H : (3,5) : VMA 2,2 F : 20.07.87 Test sheet Full-load del. w/out charge press.: Edition 1/min : 700 replaces Speed Del.quantity cm3/ Calibrating oil : 1SO 4113 1000H.: 53.0...54.0 Injection pump : VE 4/10F2100 L269 : 0 460 404 050 Low-idle speed regulation: Type number Customer-specific information Speed 1/min: 425 Customer : MOTORI VM Charge press. hPa: -Del.quantity cm3/ 1000H.: 13,0...17,0 : HR 492.4HJ Engine cm3/: 3,0 Dispersion 1000H.: (3,5) TEST BENCH REQUIREMENTS Full-load speed regulation: Calibrating-oil 1/min: 2100 return temp. Speed with thermometer : 40...48 Charge press. hPa: 1000 : 42...50 Del.quantity cm3/ electronically 1000H: 57,7...60,7 Inlet press., bar : 0,35 Start: Calibrating nozzle-holder : 1 688 901 000 assembly Speed 1/min: 100 Charge press. hPa: -Del. quantity Opening. cm3/1000H.: 55,0 bar : 147...150 mind pressure Load-dependent start of delivery: Test inj. tubing : 1 680 750 017 Speed 1/min: 1500 Outside diameter : 6 Charge press. hPa: x Wall thickness : 2 mm: 840 Inspection-pump test specifications x Length Test specifications in parentheses Injection-pump setting values Test specifications in parentheses Timing-device characteristic: Timing-device travel: 1/min: 1000 1st speed Charge press. hPa: 1000 1/min: 1500 Charge press. hPa: 1000 TD travel mm: 1,3...2,1 mm: (1,0...2,4) 1/min: 1500 Setting value mm: 4,3...4,7 2nd speed Charge press. hPa: 1000 Supply-pump pressure: TD travel mm: -1/min: 1500 Speed mm: (3,8...5,2)Charge press. hPa: 1000 Setting value bar: 5,9...6,5 1/min: 2100 3rd speed Charge press. hPa: 1000 mm: 7,1...7,9 TD travel mm: (6,8...8,2)Full-load del. with charge press.: Supply-pump pressure characteristic: 1/min: 1500 Speed Charge press. hPa: 1000 1/min: 500 1st speed

```
Charge press. hPa: 1000
Supply-pump
                                                      Idle delivery:
                 bar: 3,1...3,7
 pressure
2nd speed
              1/min: 2100
                                                      Mfg. date: until
                                                      1st speed
                hPa: 1000
                                                                    1/min: 425
Charge press.
                                                      Del.quantity cm3/: -
1000H.: (10,5..19,5)
Supply-pump
 pressure
                bar: 7,5...8,1
                                                                     1/min: 450
                                                      2nd speed
                                                                   cm3/: 7.5...12.5
1000H.: (5,5...14,5)
Overflow quantity at overflow valve:
                                                      Del.quantity
                                                                     1/min: 500
              1/min: 500
                                                      3rd speed
1st speed
                                                      Del.quantity cm3/: 0.5...5.5
1000H.: (0,0...7,5)
Charge press. hPa: -
Oveflow'
                    : 41...83
 quantity cm3/10s: (26...98)
2nd speed
              1/min: 2100
                                                      Automatic starting fuel delivery:
Charge press. hPa: 1000
Over flow
                    : 55...138
                                                      1st speed
                                                                     1/min: 400
 quantity cm3/10s: (40...153)
                                                      Deliquantity cm3/:
                                                                     1000H: 55.0
                                                       ind.
Delivery-quant. and breakaway char.:
1st speed
             1/min: 700
                                                      2nd speed
                                                                     1/min: 550
                                                                     cm3/: -
                                                      Del.quantity
Charge-air pressure-setting
                                                                     1000H: 57.0
                hPa: 450
 point
Del.quantity cm3/: 62,0...63,0
1000H.: (59,9...65,1)
                                                      Shutoff electromagnet:
              1/min: 2450
2nd speed
Charge press. hPa: 1000
                                                      Cut-in
Del.quantity cm3/: 0,0...8,5)
                                                                          : 10,0
                                                       min. voltage
                                                                          : 12.0
                                                      Rated voltage
3rd speed
              1/min: 2300
Charge press. hPa: 1000
                                                      Mounting and assembly dimensions:
Del.quantity cm3/: 27.0...33.0
1000H.: (25.5...34.5)
                                                      Designation
                                                                          : 3,2...3,4
: 5,7...6,0
4th speed
              1/min: 2100
                                                                      mm
                                                      KF
Charge press. hPa: 1000
                                                                      mm
Del.quantity cm3/: -
1000H.: (56,6...61,8)
                                                                          : 0,9..0,95
                                                      MS
                                                                      mm
                                                                          : 4,6
                                                      SVS max.
                                                                      mm
              1/min: 1500
5th speed
Charge press. hPa: 1000
                                                      Remarks:
Del.quantity cm3/: -
1000H.: (63,9...69,1)
              1/min: 700
                                                      Correction at adjusting nut (46)
6th speed
Charge press. hPa: 1000
Del.quantity cm3/: 67.5...70.5
1000H.: (65.6...72.4)
              1/min: 700
7th speed
Charge press. hPa:
              cm3/:
Deliquantity
             1000H.: (50,9...56,1)
              1/min: 600
8th speed
                hPa: -
Charge press.
               cm3/: 52,5...54,5
Deliquantity
              1000H: (50,1...56,9)
Zero delivery (stop):
Mech. shutoff:
              1/min: 2100
Speed
Del.quantity cm3/: -
1000H.: -
M02
```

Full-load del. w/out charge press.: BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min : 800 Note inst. in remarks column Del.quantity cm3/ 1000H.: 75,0...76,0 cm3/: 3,0 : CAS 3,9 A : 17.07.87 Test sheet Dispersion Edition 1000H.: (3,5) replaces Calibrating oil : ISO 4113 Low-idle speed regulation: Speed Injection pump : VE 4/10F1150 R283 1/min: 350 Del.quantity cm3/ 1000H.: 18,0...22,0 : 0 460 404 052 Type number cm3/: 3.0 1000H.: (3,5) Customer-specific information Dispersion Customer : CASE Full-load speed regulation: : D 239/745 Engine 1/min: 1215 TEST BENCH REQUIREMENTS Deliquantity cm3/ 1000H: 42\_0...48\_0 Calibrating-oil oC return temp. Start: with thermometer : 40...48 electronically : 42...50 1/min: 100 Speed Del.quantity mind cm3/1000H.: 80.0 Inlet press., bar: 0.35 Calibrating nozzle-holder Inspection-pump test specifications : 1 688 901 020 Test specifications in parentheses assembly Opening bar: 172...175 Timing-device characteristic: pressure Perforated-plate 1/min: 500 1st speed mm: 1,7...2,5 diameter mm : 0.6TD travel mm: (1, 4, ..., 2, 8)1/min: 800 2nd speed Test inj. tubing : 1 680 750 017 TD travel mm: mm: (3,7...5,1) 1/min: 1100 Outside diameter 3rd speed : 6 mm: 6,2...7,0 mm: (5,9...7,3) TD travel x Wall thickness : 2 mm : 840 x Length Start of delivery Supply-pump pressure characteristic: Prestroke mm : 0,2 (from BDC): +-0.02(0.04)1/min: 500 1st speed Supply-pump pressure bar: 4,1...4,7 Injection-pump setting values 1/min: 1100 Test specifications in parentheses 2nd speed Supply-pump Timing-device travel: bar: 6,3...6,9 pressure Overflow quantity at overflow valve: 1/min: 800 Speed Setting value mm: 4,2...4,6 1st speed Oveflow 1/min: 500 : 41...83 Supply-pump pressure: quantity cm3/10s: (26...98) 2nd speed 1/min: 1100 1/min: 800 Speed Overflow : 55...138 Setting value bar: 5,3...5,9 quantity cm3/10s: (40...153)

```
Delivery-quant. and breakaway char.:
1st speed
             1/min: 1350
Del.quantity cm3/: 0,0...3,0
1000H.: -
2nd speed
              1/min: 1275
              cm3/: 0,0...10,0
Del.quantity
             1000H.: -
3rd speed
              1/min: 1225
              cm3/: 10,0...46,0
Del.quantity
             1000H.:
              1/min: 1215
4th speed
Del.quantity
             cm3/: -
             1000H.: (40,5...49,5)
              1/min: 1100
cm3/: 73,0...76,0
5th speed
Del.quantity
             1000H.: (72,0...77,0)
              1/min: 800
6th speed
Del.quantity cm3/: -
1000H.: (73,2...77,8)
              1/min: 500
7th speed
Del.quantity cm3/: 07.0....74,0)
Zero delivery (stop):
Mech. shutoff:
              1/min: 1100
Speed
Deliguantity cm3/: 0..3
Idle delivery:
Mfg. date: until
             1/min: 350
1st speed
Del.quantity cm3/: -
1000H.: (16,0..24,0)
              1/min: 500
2nd speed
Del.quantity cm3/: 0,0...4,0
1000H.: -
Automatic starting fuel delivery:
              1/min: 350
1st speed
Del.quantity
               cm3/: -
              1000H: 80,0
 ind.
              1/min: 450
2nd speed
Del.quantity
               cm3/: -
              1000H: 80,0
 ax.
Shutoff electromagnet:
Cut-in
min. voltage
Rated voltage
Mounting and assembly dimensions:
Designation
               mm
```

M04

KF mm : 5,1..5,4
MS mm : 1,3..1,55
SVS max. mm : 3,6
XK mm : 20,2...22,2
XL mm : 9,3...12,7

Note inst. in remarks column

Test sheet : CAS 3.9 B Edition : 09.07.87 replaces : -

Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283 Type number : 0 460 404 052

Customer Part-No.: 1329 125 C1

Customer-specific information

Customer : CASE

Engine : D 239/743

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening -

pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Start of delivery

Prestroke mm: 0,2 (from BDC): +-0.02

Indicator setting:

Piston stroke mm: 1.0 Outlet

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800

Setting value mm: 4,2...4,6

Supply-pump pressure:

```
Setting value bar: 5,3...5,9
                                                         Over flow
                                                                             : 55...138
                                                          quantity cm3/10s: (40...153)
Full-load del. w/out charge press.:
                                                         Delivery-quant. and breakaway char.:
                                                                       1/min: 1300
Speed
              1/min : 800
                                                         1st speed
                                                         Del.quantity cm3/: 0,0...3,0
1000H.: -
Deliquantity cm3/
              1000H.: 67.5...68.5
                                                                        1/min: 1260
Dispersion
                cm3/: 3,0
                                                         2nd speed
                                                         Del.quantity cm3/: 0,0...10,0
1000H.: -
              1000H.: (3,5)
                                                                        1/min: 1210
Low-idle speed regulation:
                                                         3rd speed
                                                         Del.quantity cm3/: 0,0...10,0
1000H.: -
               1/min: 350
Speed
Speed Del.quantity cm3/ 1000H.: 18,0...22,0 Dispersion cm3/: 3,0 1000H.: (3,5)
                                                                        1/min: 1190
                                                         4th speed
                                                        Del.quantity cm3/: -
1000H.: (40,5...49,5)
                                                                        1/min: 1100
                                                         5th speed
Full-load speed regulation:
                                                         Del.quantity cm3/: 63,8...66,8
                                                                      1000H.: (62,6...68,0)
               1/min: 1190
                                                         6th speed
                                                                       1/min: 800
Speed
                                                        Del.quantity cm3/: -

1000H.: (65,3...70,7)

7th speed 1/min: 500

Del.quantity cm3/: 58,5...62,5

1000H.: (57,1...63,9)
Del.quantity
               cm3/
               1000H: 42,0...48,0
Start:
               1/min: 100
Speed
Del.quantity
                                                         Zero delivery (stop):
         cm3/1000H.: 80.0
mind
                                                        Mech. shutoff:
Inspection-pump test specifications
                                                                        1/min: 1100
                                                         Speed
Test specifications in parentheses
                                                        Del.quantity cm3/: -
                                                                      1000H.: -
Timing-device characteristic:
                                                         Idle delivery:
1st speed
               1/min: 500
                                                        Mfg. date: until : -
TD travel
                  mm: 1,7...2,5
                                                         1st speed
                                                                       1/min: 350
               mm: (1.4...2,8)
1/min: 800
                                                        Deliquantity cm3/: -
                                                                      1000H.: (15,5..24,5)
2nd speed
TD travel
                                                        2nd speed
                                                                       1/min: 500
                  mm: -
                                                        Del.quantity cm3/: 0,0...4,0
1000H.: -
                  mm: (3,7...5,1)
               1/min: 1100
3rd speed
                  mm: 6,2...7,0
mm: (5,9...7,3)
TD travel
                                                        Automatic starting fuel delivery:
Supply-pump pressure characteristic:
                                                         1st speed
                                                                       1/min: 350
                                                        Del.quantity cm3/: -
               1/min: 500
                                                                        1000H: 80,0
                                                         ind.
1st speed
Supply-pump
                 bar: 4,1...4,7
                                                                       1/min: 450
 pressure
                                                        2nd speed
               1/min: 1100
                                                        Del.quantity cm3/:
2nd speed
Supply-pump
                                                                       1000H: 80_0
                                                         ax.
                 bar: 6,3...6,9
 pressure
                                                        Shutoff electromagnet:
Overflow quantity at overflow valve:
                                                        Cut-in
               1/min: 500
1st speed
                                                         min. voltage
                     : 41...83
Oveflow
                                                        Rated voltage
            cm3/10s: (26...98)
1/min: 1100
 quantity
                                                        Mounting and assembly dimensions:
2nd speed
M06
```

Designation K KF MS SVS max. XK XL mm : 5,1...5,4 mm : 1,3..1,55 mm : 3,6 mm : 20,2...22,2 mm : 9,3...12,7

BU . IFINJ. - PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : CAS 3.9 C Edition : 09.07.87

replaces

Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283 Type number : 0\_460 404 052

Customer Part-No.: 1329 126 C1

Customer-specific information

Customer : CASE

Engine : D 239/644

TEST BENCH REQUIREMENTS

Calibrating-oil oc return temp.

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening

pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm : 840 x Length

Start of delivery

Prestroke mm: 0,2

(from BDC): +-0.02(0.04)

Indicator setting:

Piston stroke mm: 1.0 Outlet |

Start of delivery block Piston stroke mm: -

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800

Setting value mm: 4,2...4,6

```
Supply-pump pressure:
                                                       Oveflow
                                                                            : 41...83
                                                                    cm3/10s: (26...98)
1/min: 1050
                                                         quantity
                                                        2nd speed
              1/min: 800
Setting value bar: 5,3...5,9
                                                        Overflow
                                                                            : 55...138
                                                         quantity cm3/10s: (40...153)
Full-load del. w/out charge press.:
                                                       Delivery-quant. and breakaway char.:
Speed
              1/min : 800
                                                        1st speed
                                                                      1/min: 1200
Del.quantity cm3/
                                                       Del.quantity cm3/: 0,0...3,0
                                                                     1000H.: -
              1000H.: 70,0...71,0
                cm3/: 3,0
Dispersion
                                                        2nd speed
                                                                      1/min: 1180
                                                       Del.quantity cm3/: 0,0...10,0
1000H.: -
              1000H.: (3,5)
                                                       3rd speed 1/min: 1130
Del.quantity cm3/: 0,0...10,0
1000H.: -
Low-idle speed regulation:
Speed
               1/min: 350
Del.quantity cm3/
                                                        4th speed
                                                                      1/min: 1100
              1000H.: 18,0...22,0
                                                       Del.quantity cm3/: -
1000H.: (40,5...49,5)
              cm3/: 3.0
1000H.: (3,5)
Dispersion
                                                                      1/min: 1000
                                                        5th speed
                                                       Del.quantity cm3/: 69.5...72.5
1000H.: (68.3...73.7)
6th speed 1/min: 800
Full-load speed regulation:
Speed
               1/min: 1100
                                                        6th speed
                                                       Del.quantity cm3/: -
1000H.: (67,8...73,2)
Del.quantity
               cm3/
               1000H: 42,0...48,0
                                                                      1/min: 500
                                                        7th speed
                                                       Del.quantity cm3/: 62,5...66,5
1000H.: (61,1...67,9)
Start:
               1/min: 100
Speed
Del.quantity
                                                       Zero delivery (stop):
         cm3/1000H.: 80.0
mind
                                                       Mech. shutoff:
                                                                      1/min: 1000
                                                       Speed
Inspection-pump test specifications
                                                       Del.quantity cm3/: - 1000H.: -
Test specifications in parentheses
Timing-device characteristic:
                                                       Idle delivery:
1st speed
               1/min: 500
                                                       Mfg. date: until : -
                  mm: 1,7...2,5
mm: (1,4...2,8)
TD travel
                                                        1st speed
                                                                     1/min: 350
                                                       Del.quantity cm3/: -
1000H.: (15,5..24,5)
               1/min: 800
2nd speed
                                                                      1/min: 500
ID travel
                  mm: -
                                                       2nd speed
                                                       Del.quantity cm3/: 0,0...4,0
1000H.: -
                  mm: (3,7...5,1)
               1/min: 1000
3rd speed
                  mm: 5,4...6,2
mm: (5,1...6,5)
TD travel
                                                       Automatic starting fuel delivery:
                                                                      1/min: 350
Supply-pump pressure characteristic:
                                                       1st speed
                                                       Del.quantity
                                                                      cm3/: -
               1/min: 500
                                                                      1000H: 80,0
                                                         ind.
1st speed
Supply-pump
                 bar: 4,1...4,7
                                                                      1/min: 450
                                                       2nd speed
 pressure
              1/min: 1000
                                                       Del.quantity
                                                                      cm3/: -
2nd speed
                                                                      1000H: 80.0
Supply-pump
                 bar: 5,9...6,5
 pressure
                                                       Shutoff electromagnet:
Overflow quantity at overflow valve:
                                                       Cut-in
1st speed
              1/min: 500
                                                        min. voltage
M09
```

Rated voltage : -

Mounting and assembly dimensions:

Designation K KF MS SVS max. XK XL mm mm : -mm : 5,1...5,4 mm : 1,3..1,55 mm : 3,6 mm : 20,2...22,2 mm : 9,3...12,7

Note inst. in remarks column

Test sheet : CAS 3.9 D Edition : 09.07.87 replaces : -

Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283 Type number : 0 460 404 052

Customer Part-No.: 1329 127 C1

Customer-specific information Customer : CASE

: D 239/F-684 WT Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening |

pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Start of delivery

Prestroke mm: 0,2

(from BDC): +-0.02(0.04)

Indicator setting:

Piston stroke mm: 1.0 Outlet.

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800

Setting value mm: 4,2...4,6

Supply-pump pressure:

```
Setting value bar: 5,3...5,9
                                                        Overflow
                                                                             : 55...138
                                                         quantity cm3/10s: (40...153)
Full-load del. w/out charge press.:
                                                        Delivery-quant. and breakaway char.:
              1/min : 800
                                                                      1/min: 1350
Speed
                                                        1st speed
                                                        Del.quantity cm3/: 0,0...3,0
1000H.: -
Deliquentity cm3/
              1000H.: 70,0...71,0
cm3/: 3,0
1000H.: (3,5)
Dispersion
                                                                       1/min: 1270
                                                        2nd speed
                                                        Del.quantity cm3/: 0,0...10,0
1000H.: -
                                                                       1/min: 1220
Low-idle speed regulation:
                                                        3rd speed
                                                        Del.quantity cm3/: 0,0...10,0
                                                                      1000H.:
               1/min: 350
Speed
Del.quantity cm3/
1000H.: 18.0...22.0
Dispersion cm3/: 3.0
1000H.: (3.5)
                                                                       1/min: 1210
                                                        4th speed
                                                        Del.quantity cm3/: -
1000H.: (40,0...49,0)
                                                        5th speed
                                                                       1/min: 1150
                                                        Del.quantity cm3/: 65,2...68,2
1000H.: (64,0...69,4)
Full-load speed regulation:
                                                        Oet.quantity cm3/: -
1000H.: (67,8...73,2)
7th speed 1/min: 500
                                                                       1/min: 800
               1/min: 1210
Speed
Deliquentity
               cm3/
               1000H: 41,5...47,5
                                                        Del.quantity cm3/: 61,2...65,2
1000H.: (59,8...66,6)
Start:
Speed
               1/min: 100
Del.quantity
                                                        Zero delivery (stop):
         cm3/1000H.: 80.0
mind
                                                        Mech. shutoff:
Inspection-pump test specifications
                                                                       1/min: 1150
                                                        Speed
                                                        Del.quantity cm3/: - 1000H.: -
Test specifications in parentheses
Timing-device characteristic:
                                                        Idle delivery:
               1/min: 500
1st speed
                                                        Mfg. date: until
TD travel
                                                                       1/min: 350
                  mm: 1,7...2,5
                                                        1st speed
                  mm: (1,4...2,8)
                                                        Del.quantity cm3/: -
               1/min: 800
                                                                      1000H.: (15,5..24,5)
2nd speed
                                                                       1/min: 500
TD travel
                                                        2nd speed
                  mm:
               mm: (3,7...5,1)
1/min: 1150
                                                        Del.quantity cm3/: 0,0...4,0
1000H.: -
3rd speed
                  mm: 6,6...7,4
mm: (6,3...7,7)
TD travel
                                                        Automatic starting fuel delivery:
Supply-pump pressure characteristic:
                                                        1st speed
                                                                       1/min: 350
                                                        Del.quantity cm3/: -
                                                                       1000H: 80,0
               1/min: 500
                                                         ind.
1st speed
Supply-pump
                 bar: 4,1...4,7
                                                                       1/min: 450
 pressure
                                                        2nd speed
               1/min: 1150
                                                        Del.quantity cm3/: -
2nd speed
                                                                       1000H: 80,0
Supply-pump
                 bar: 6,5...7,1
 pressure
                                                        Shutoff electromagnet:
Overflow quantity at overflow valve:
                                                        Cut-in
               1/min: 500
                                                         min. voltage
1st speed
Oveflow
                    : 41...83
                                                        Rated voltage
 quantity cm3/10s: (26...98)
              1/min: 1150
                                                        Mounting and assembly dimensions:
2nd speed
H12
```

Designation K KF MS SVS max. XK XL

mm : 5,1...5,4 mm : 1,3..1,55 mm : 3,6 mm : 20,2...22,2 mm : 9,3...12,7

Note inst. in remarks column

Test sheet : CAS 3.9 E Edition : 09.07.87 replaces : -

Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283 Type number : 0\_460 404 052

Customer Part-No.: 1329 128 C1

Customer-specific information

Customer

: D 239/684 Engine

#### TEST BENCH REQUIREMENTS

Calibrating-bil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening 0

pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Start of delivery

Prestroke mm: 0,2

(from BDC): +-0,02(0,04)

Indicator setting:

Piston stroke mm: 1.0 Outlet

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

1/min: 800 Speed Setting value mm: 4,2...4,6

Supply-pump pressure:

```
Setting value bar: 5,3...5,9
                                                          Overflow
                                                                               : 55...138
                                                           quantity cm3/10s: (40...153)
Full-load del. w/out charge press.:
                                                          Delivery-quant. and breakaway char.:
Speed
              1/min : 800
                                                          1st speed
                                                                        1/min: 1400
                                                         Del.quantity cm3/: 0,0...3,0
1000H.: -
Del.quantity cm3/
1000H.: 73,5...74,5
Dispersion cm3/: 3,0
                                                                         1/min: 1310
                                                          2nd speed
                                                          Del.quantity cm3/: 0,0...10,0
1000H.: -
              1000H.: (3,5)
                                                                         1/min: 1260
Low-idle speed regulation:
                                                          3rd speed
                                                         Del.quantity cm3/: 0,0...10,0
1000H.: -
               1/min: 350
Speed
                                                          4th speed
                                                                         1/min: 1250
Del.quantity cm3/
                                                         Del.quantity cm3/: -
1000H.: (41,5...50,5)

5th speed 1/min: 1150

Del.quantity cm3/: 70,0...73,0
1000H.: (68,8...74,2)
              1000H.: 18,0...22,0
cm3/: 3,0
1000H.: (3,5)
Dispersion
Full-load speed regulation:
                                                                         1/min: 800
               1/min: 1250
                                                          6th speed
                                                         Del.quantity cm3/: -
1000H.: (71,3...76,7)
Del.quantity
                cm3/
               1000H: 43,0...49,0
                                                                         1/min: 500
                                                          7th speed
                                                          Del.quantity cm3/: 66,7...70,7
1000H.: (65,3...72,1)
Start:
Speed
               1/min: 100
Del.quantity
                                                          Zero delivery (stop):
mind
         cm3/1000H.: 80,0
                                                         Mech. shutoff:
                                                                         1/min: 1150
Inspection-pump test specifications
                                                          Speed
                                                         Del.quantity cm3/: - 1000H.: -
Test specifications in parentheses
Timing-device characteristic:
                                                          Idle delivery:
               1/min: 500
                                                         Mfg. date: until : -
1st speed
                   mm: 1,7...2,5
                                                                        1/min: 350
TD travel
                                                          1st speed
                                                         Del.quantity cm3/: -
                   mm: (1,4...2,8)
                                                                        1000H.: (15,5..24,5)
               1/min: 800
2nd speed
                                                                         1/min: 500
TD travel
                                                          2nd speed
                   mm:
               mm: (3,7...5,1)
1/min: 1150
                                                         Del.quantity cm3/: 0,0...4,0
1000H.: -
3rd speed
                   mm: 6,6...7,4
mm: (6,3...7,7)
TD travel
                                                         Automatic starting fuel delivery:
Supply-pump pressure characteristic:
                                                                         1/min: 350
                                                          1st speed
                                                         Del quantity
                                                                         cm3/: ~
                                                           ind,
                                                                         1000H: 80,0
1st speed
               1/min: 500
Supply-pump
               bar: 4,1...4,7
1/min: 1150
pressure
                                                         2nd speed
                                                                         1/min: 450
2nd speed
                                                         Del.quantity cm3/: -
                                                                         1000H: 80,0
Supply-pump
 pressure
                 bar: 6,6...7,4
                                                         Shutoff electromagnet:
Overflow quantity at overflow valve:
                                                         Cut-in
               1/min: 500
1st speed
                                                          min. voltage
                    : 41...83
                                                         Rated voltage
                                                                               : -
Oveflow
            cm3/10s: (26...98)
1/min: 1150
 quantity
                                                         Mounting and assembly dimensions:
2nd speed
```

Designation
K
KF
MS
SVS max.
XK
XL : -: 5,1...5,4 : 1,3..1,55 : 3,6 : 20,2...22,2 : 9,3...12,7 mm mm mm

mm mm

Note inst. in remarks column

Test sheet : CAS 3,9 F : 09.07.87 Edition

replaces

Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283 Type number : 0 460 404 052 Customer Part-No. : 1329 136 C1

Customer-specific information

Customer : CASE

: D 206/733 WT Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

: 1 688 901 020 assembly

Opening

pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Start of delivery

Prestroke mm: 0,2

(from BDC): +-0,02(0,04)

Indicator setting:

Piston stroke mm: 1.0 Outlet

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800

Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 800

```
Setting value bar: 5,3...5,9
                                                    Over flow
                                                                        : 55...138
                                                      quantity cm3/10s: (40...153)
Full-load del. w/out charge press.:
                                                    Delivery-quant. and breakaway char.:
             1/min : 800
                                                                  1/min: 1250
Speed
                                                     1st speed
                                                    Del.quantity cm3/: 0,0...3,0
Del.quantity cm3/
             1000H.: 70,8...71,8
cm3/: 3,0
                                                                 1000H.: -
Dispersion
                                                                   1/min: 1200
                                                     2nd speed
                                                    Del.quantity cm3/: 0,0...10,0
             1000H.: (3,5)
                                                                 1000H.:
Low-idle speed regulation:
                                                                  1/min: 1150
                                                     3rd speed
                                                                  cm3/: 0,0...10,0
                                                    Del.quantity
                                                                 1000H.:
Speed
              1/min: 350
                                                                  1/min: 1130
Del.quantity cm3/
                                                     4th speed
                                                    Del.quantity cm3/: -
1000H.: (34,0...43,0)
             1000H.: 18,0...22,0
             cm3/: 3,0
1000H.: (3,5)
Dispersion
                                                                  1/min: 1050
                                                     5th speed
                                                    Del.quantity cm3/: 09,0....73,0)
Full-load speed regulation:
                                                                  1/min: 800
              1/min: 1130
                                                     6th speed
Speed
                                                    Del.quantity cm3/: -
1000H.: (68,6...74,0)
7th speed 1/min: 500
Del.quantity
              cm3/
              1000H: 35,5....41,5
                                                    Del.quantity cm3/: 62,9...66,9
Start:
                                                                 1000H.: (61,5...68,3)
              1/min: 100
Speed
Del.quantity
                                                    Zero delivery (stop):
        cm3/1000H.: 80,0
mind
                                                    Mech. shutoff:
                                                                  1/min: 1050
Inspection-pump test specifications
                                                    Speed
                                                    Del.quantity cm3/: -
Test specifications in parentheses
                                                                 1000H.: -
Timing-device characteristic:
                                                     Idle delivery:
              1/min: 500
                                                    Mfg. date: until : -
1st speed
                 mm: 1,7...2,5
mm: (1,4...2,8)
TD travel
                                                     1st speed
                                                                 1/min: 350
                                                    Del.quantity
                                                                  cm3/:
                                                                 1000H.: (15,5..24,5)
1/min: 500
              1/min: 800
2nd speed
TD travel
                 mm:
                                                    2nd speed
                 mm: (3,7...5,1)
                                                    Del.quantity cm3/: 0,0...4,0
                                                                 1000H.: -
              1/min: 1050
3rd speed
                 mm: 5,8...6,6
TD travel
                 mm: (5,5...6,9)
                                                    Automatic starting fuel delivery:
                                                                  1/min: 350
Supply-pump pressure characteristic:
                                                    1st speed
                                                                  cm3/: -
                                                    Del.quantity
                                                                  1000H: 80,0
1st speed
              1/min: 500
                                                     ind.
Supply-pump
                bar: 4,1...4,7
                                                                  1/min: 450
 pressure
                                                    2nd speed
                                                    Del.quantity
2nd speed
              1/min: 1050
                                                                  cm3/: -
Supply-pump
                                                                  1000H: 80,0
                                                     ax.
                bar: 6,1...6,7
 pressure
                                                    Shutoff electromagnet:
Overflow quantity at overflow valve:
                                                    Cut-in
              1/min: 500
1st speed
                                                     min. voltage
Oveflow
                   : 41...83
                                                    Rated voltage
           cm3/10s: (26...98)
 quantity
             1/min: 1050
                                                    Mounting and assembly dimensions:
2nd speed
M18
```

Designation K KF MS SVS max. XK XL 5,1...5,4 : 1,3..1,55 : 3,6 : 20,2...22,2 : 9,3...12,7 mm mm mm mm mm mm

Note inst. in remarks column

Test sheet : CAS 3.9 G Edition : 09.07.87 replaces : -

Calibrating oil : ISO 4113

Injection pump : VE 4/10F1150 R283 Type number : 0 460 404 052 Customer Part-No. : 1329 137 C1

Customer-specific information

Customer : CASE

: D 206/584/585 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening |

pressure bar : 172...175

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840 x Length

Start of delivery

Prestroke mm: 0,2

(from BDC): +-0.02(0.04)

Indicator setting:

Piston stroke mm: 1.0 Outlet

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 800 Setting value mm: 4,2...4,6

Supply-pump pressure:

```
Setting value bar: 5,3...5,9
                                                       Overflow
                                                                           : 55...138
                                                        quantity cm3/10s: (40...153)
Full-load del. w/out charge press.:
                                                       Delivery-quant. and breakaway char.:
             1/min : 800
                                                                     1/min: 1350
Speed
                                                       1st speed
Del.quantity cm3/
                                                       Del.quantity cm3/: 0,0...3,0
             1000H.: 66,8...67,8
                                                                    1000H.: -
             cm3/: 3.0
1000H.: (3,5)
                                                                     1/min: 1290
Dispersion
                                                       2nd speed
                                                       Del.quantity cm3/: 0,0...10,0
1000H.: -
Low-idle speed regulation:
                                                       3rd speed
                                                                     1/min: 1240
                                                       Del.quantity cm3/: 0,0...10,0
1000H.: -
              1/min: 350
Speed
Del.quantity cm3/
                                                                     1/min: 1230
                                                       4th speed
             1000H.: 18,0...22,0
                                                       Del.quantity cm3/: -
1000H.: (35,5...44,5)
             cm3/: 3.0
1000H.: (3,5)
Dispersion
                                                                     1/min: 1150
                                                       5th speed
                                                       Del.quantity cm3/: 61.6..,64.6
1000H.: (60.4...65.8)
Full-load speed regulation:
                                                                     1/min: 800
              1/min: 1230
Speed
                                                       6th speed
                                                       Del.quantity cm3/: -
1000H.: (64,6...70,0)
Del.quantity
               cm3/
              1000H: 37,0...43,0
                                                                    1/min: 500
cm3/: 56,7...60,7
1000H.: (55,3...62,1)
                                                       7th speed
Start:
                                                       Del quantity
Speed
              1/min: 100
Del.quantity
                                                       Zero delivery (stop):
         cm3/1000H.: 80,0
mind
                                                       Mech. shutoff:
Inspection-pump test specifications
                                                       Speed
                                                                     1/min: 1150
                                                       Del.quantity cm3/: - 1000H.: -
Test specifications in parentheses
Timing-device characteristic:
                                                       Idle delivery:
              1/min: 500
1st speed
                                                       Mfg. date: until : -
                  mm: 1,7...2,5
                                                                     1/min: 350
TD travel
                                                       1st speed
                                                      Del.quantity cm3/: -
1000H.: (15,5..24,5)
                  mm: (1,4...2,8)
              1/min: 800
2nd speed
                                                                     1/min: 500
TD travel
                  mm:
                                                       2nd speed
              mm: (3,7...5,1)
1/min: 1150
                                                       Del.quantity cm3/: 0,0...4,0
1000H.: -
3rd speed
                  mm: 6,6...7,4
mm: (6,3...7,7)
ID travel
                                                       Automatic starting fuel delivery:
Supply-pump pressure characteristic:
                                                       1st speed
                                                                     1/min: 350
                                                      Del.quantity cm3/: -
                                                                     1000H: 80,0
              1/min: 500
                                                        ind.
1st speed
Supply-pump
                bar: 4,1...4,7
 pressure
                                                       2nd speed
                                                                     1/min: 450
              1/min: 1150
                                                      Del.quantity cm3/: -
2nd speed
                                                                     1000H: 80,0
Supply-pump
                bar: 6,5...7,1
 pressure
                                                       Shutoff electromagnet:
Overflow quantity at overflow valve:
                                                      Cut-in
              1/min: 500
                                                       min. voltage
1st speed
Oveflow
                    : 41...83
                                                      Rated voltage
            cm3/10s: (26...98)
 quantity
              1/min: 1150
2nd speed
                                                      Mounting and assembly dimensions:
M21
```

Designation K KF MS SVS max. XK XL mm : mm : 5,1...5,4
mm : 1,3..1,55
mm : 3,6
mm : 20,2...22,2
mm : 9,3...12,7

Remarks:

Note inst. in remarks column

Test sheet : VWW 2,0 13 Edition replaces : 07.07.87 : 09.85 Calibrating oil : ISO 4113

Injection pump : VE 5/10F2400 L137 Type number : 0 460 405 030

Customer-specific information

Customer : VW

: 153 (SG) Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm : 840 x Length

Start of delivery

Prestroke mm: 0,14

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

1/min: 1400 Setting value mm: 2,4...2,8

Supply-pump pressure:

1/min: 1400 Setting value bar: 5,0...5,6

Full-load del. w/out charge press.:

Speed 1/min : 1400

Del.quantity cm3/	Del.quantity cm3/: -
1000H.: 32,533,5	1000H.: (5,013,0)
Dispersion cm3/: 2,5 1000H.: (3,0)	1 3rd speed 1/min: 2550
(50011 (5,0)	Del.quantity cm3/: 14,524,5 1 1000H.: (13,525,5)
Low-idle speed regulation:	1 4th speed 1/min: 2400
and the special sections	l Del.quantity cm3/: 28,030,0
Speed 1/min: 375	Del.quantity cm3/: 28,030,0 1 1000H.: (26,831,2)
Del.quantity cm3/	1 5th speed 1/min: 1400
1000H.: 6,010,0	Del.quantity cm3/: -
Dispersion cm3/: 2.0 1000H.: (3.0)	1 1000H.: (30,835,2)
Full-load speed regulation:	1 6th speed 1/min: 750 1 Del.quantity cm3/: 23,326,3
Tarr voda speca regarderon.	1 1000H.: (21,827,8)
Speed 1/min: 2650	1
Del.quantity cm3/	<pre>Zero delivery (stop):</pre>
1000H: 7,011,0	
04	l Electr. shutoff:
Start:	I Speed 1/min: 375 I ELAB volt: -
Speed 1/min: 100	Del.quantity cm3/: 0,03,0
Del.quantity :-	I max. 1000H.: -
mind cm3/1000H.: 50,0	1
	I Idle delivery:
Inspection-pump test specifications	1 445 455 455
Test specifications in parentheses	Mfg. date: until : -
1	<pre>1 1st speed 1/min: 375 1 Del.quantity cm3/: -</pre>
Timing-device characteristic:	1 1000H.: (4,012,0)
	I 2nd speed 1/min: 450
1st speed	Del.quantity cm3/: 0,03,0 1 1000H.: -
TD travel mm: 1,32,1	1 1000H.: -
mm: (0,92,5)	1 Automotic stantics fuel delivery
2nd speed 1/min: 1400 TD travel mm: -	Automatic starting fuel delivery:
mm: (1,83,4)	l 1st speed 1/min: 400
3rd speed 1/min: 2400	<pre>Del.quantity cm3/: -</pre>
TD travel mm: 5,15,9	l ind. 1000H: 15,5
mm: (4,76,3)	
Cural value anagaira shangatariatia	1 2nd speed 1/min: 500
Supply-pump pressure characteristic:	<pre>Del.quantity cm3/: - 1 ax. 1000H: 23,5</pre>
1st speed 1/min: 750	1 47. 100011. 23,3
Supply-pump	Shutoff electromagnet:
pressure bar: 3,44,0	1
2nd speed 1/min: 2400	Cut-in
Supply-pump pressure bar: 7,37,9	min. voltage : 10,0
pressure bar: 7,3,,7,9	Rated voltage : 12,0
Overflow quantity at overflow valve:	Mounting and assembly dimensions:
1st speed 1/min: 750	l Designation
2nd speed 1/min: 2400	1 K mm:-
Delivery-quant. and breakaway char.:	I KF mm : 5.76.0 I MS mm : 1.71.9
1st speed 1/min: 2750	1 SVS max. mm : 2,8
Del.quantity cm3/: 0,06,0	1
1000H.: -	Remarks:
2nd speed 1/min: 2650	!
	l .

```
Del.quantity cm3/
                                                                1000H.: 32,5...33,5
cm3/: 2,5
BOSCH-INJ.-PUMP TEST SPECIFICATIONS
                                                   Dispersion
Note inst. in remarks column
                                                                1000H.: (3,0)
                   : VWW 2,0 I2
: 07.07.87
Test sheet
                                                   Low-idle speed regulation:
Edition
replaces
                   : 09.85
                                                   Speed
                                                                 1/min: 375
                                                   Del.quantity cm3/
1000H.: 6,0...10,0
Calibrating oil
                   : I30 4113
                                                                  cm3/: 2,0
                   : VE 5/10F2400 L137-1
Injection pump
                                                   Dispersion
                   : 0 460 405 032
                                                                1000H.: (3,0)
Type number
                                                   Full-load speed regulation:
Customer-specific information
Customer
                   : VW
                                                   Speed
                                                                 1/min: 2650
                                                   Del.quantity cm3/
                   : 153 (SG)
                                                                 1000H: 7,0...11,0
Engine
TEST BENCH REQUIREMENTS
                                                   art:
Calibrating-oil return temp. °C
                                                   Speed
                                                                 1/min: 100
                                                   Del.quantity
                                                   mind cm3/1000H.: 50.0
with thermometer : 40...48
                 : 42...50
electronically
                                                   Inspection-pump test specifications
Inlet press., bar : 0,35
                                                   Test specifications in parentheses
Calibrating nozzle-holder
                  : 1 688 901 000
                                                   Timing-device characteristic:
 assembly
Opening
                                                                 1/min: 1000
                                                   1st speed
pressure bar : 147...150
                                                   TD travel
                                                                    mm: 1,3...2,1
                                                                    mm: (0,9...2,5)
                                                                 1/min: 1400
                                                   2nd speed
Test inj. tubing : 1 680 750 017
                                                   TD travel
                                                                    toto:
                                                                 mm: (1,8...3,4)
1/min: 2400
Outside diameter : 6
                                                   3rd speed
x Wall thickness : 2
                                                                    mm: 5,1...5,9
                                                   TD travel
               mm : 840
                                                                    mm: (4,7...6,3)
x Length
                                                   Supply-pump pressure characteristic:
Start of delivery
        e mm : 0,14
(from BDC): +-0,02(0,04)
Prestroke
                                                                 1/min: 750
                                                   1st speed
                                                   Supply-pump
                                                                   bar: 3,4...4.0
Injection-pump setting values
                                                    pressure
                                                                 1/min: 2400
                                                   2nd speed
Test specifications in parentheses
                                                   Supply-pump
Timing-device travel:
                                                                   bar: 7,3...7,9
                                                    pressure
             1/min: 1400
                                                   Overflow quantity at overflow valve:
Setting value mm: 2,4...2,8
                                                                 1/min: 750
                                                   1st speed
                                                                 1/min: 2400
Supply-pump pressure:
                                                   2nd speed
             1/min: 1400
                                                   Delivery-quant. and breakaway char.:
Speed
                                                               1/min: 2750
Setting value bar: 5,0...5,6
                                                   1st speed
                                                   Del.quantity cm3/: 0,0...6,0
1000H.: -
Full-load del. w/out charge press.:
                                                                 1/min: 2650
                                                   2nd speed
Speed
            1/min : 1400
```

M26

```
Del.quantity cm3/: -
1000H.: (5,0...13,0)
3rd speed 1/min: 2550
Del.quantity cm3/: 14,5...24,5
1000H.: (13,5...25,5)
4th speed
                1/min: 2400
                 cm3/: 28,0...30,0
Del.quantity
               1000H.: (26,8...31,2)
                 1/min: 1400
5th speed
Del.quantity cm3/: -
1000H.: (30,8...35,2)
6th speed 1/min: 750
Del.quantity cm3/: 23,3...26,3
1000H.: (21,8...27,8)
Zero delivery (stop):
Electr. shutoff:
                1/min: 375
Speed
ELAB
                 volt: -
Del.quantity cm3/: 0,0...3,0 max. 1000H.: -
Idle delivery:
Mfg. date: until
                1/min: 375
1st speed
                 cm3/: -
Del.quantity
               1000H.: (4,0...12,0)
                1/min: 450
2nd speed
                cm3/: 0,0...3,0
Del.quantity cm3/:
1000H.:
Automatic starting fuel delivery:
1st speed
                1/min: 400
                 cm3/:
Del.quantity
                1000H: 15,5
 ind.
2nd speed
                1/min: 500
Del.quantity cm3/: -
                1000H: 23,5
Shutoff electromagnet:
Cut-in
                       : 10,0
 min, voltage
Rated voltage
                       : 12,0
Mounting and assembly dimensions:
Designation
                 mm
                      : 5,7...6,0
KF
                 mm
MS
                      : 1,7...1,9
                 mm
                      : 2.8
SVS max.
                 mm
Remarks:
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Low-idle speed regulation: Note inst. in remarks column Speed 1/min: 375 Del.quantity cm3/ 1000H.: 6,0...10,0 : VWW 2,3 B1 Test sheet : 20.07.87 cm3/: 2,0 1000H.: (3,0) Edition Dispersion : 04.86 replaces : ISO 4113 Calibrating oil Full-load speed regulation: Injection pump : VE 6/10F2400 L32 1/min: 2700 Speed : 0 460 406 003 Del.quantity cm3/ Type number 1000H: 7,0...11,0 Customer-specific information Start: Customer : VW : 087 Engine 1/min: 100 Speed Del.quantity mind cm3/1000H.: 35,0 TEST BENCH REQUIREMENTS Calibrating-oil oC Inspection-pump test specifications Test specifications in parentheses return temp. with thermometer : 40...48 electronically : 42...50 Timing-device characteristic: Inlet press., bar : 0,35 1st speed 1/min: 800 TD travel mm: 5,7...6,5 Calibrating nozzle-holder mm: (5.4...6,8) 1/min: 1000 : 1 688 901 000 assembly 2nd speed mm: 0,8...1,6 mm: (0,5...1,9) 1/min: 1500 Opening TD travel pressure bar : 147...150 3rd speed TD travel mm: -Test inj. tubing : 1 680 750 017 mm: (2,3...3,7)1/min: 2400 4th speed TD travel mm: 5,7...6,5 Outside diameter : 6 mm: (5,4...6,8)x Wall thickness mi: 340 x Length Supply-pump pressure characteristic: Injection-pump setting values 1/min: 750 Test specifications in parentheses 1st speed Supply-pump bar: 3,2...3,8 Timing-device travel: pressure 1/min: 2400 2nd speed 1/min: 1500 Supply-pump Speed bar: 7,5...8,1 Setting value mm: 2,8...3,2 pressure Supply-pump pressure: Overflow quantity at overflow valve: 1/min: 750 1/min: 1500 Speed 1st speed : 41...83 Oveflow Setting value bar: 5,2...5,8 cm3/10s: (26...98) quantity Full-load del. w/out charge press.: 2nd speed 1/min: 2400 Overflow : 55...138 quantity cm3/10s: (40...153) 1/min : 1500 Speed Del.quantity cm3/ 1000H.: 28,5...29,5 cm3/: 2,5 Delivery-quant. and breakaway char.: 1st speed 1/min: 2800 Dispersion 1000H.: (3.0) M28

```
Del.quantity cm3/: 0,0...6,0
1000H.: -
               1/min: 2700
2nd speed
Del.quantity cm3/: -
1000H.: (5,0...13,0)
               1/min: 2625
3rd speed
Del.quantity cm3/: 14,5...24,5
1000H.: (13,5...25,5)
4th speed
               1/min: 2400
Del.quantity cm3/: 23.0...25.0
1000H.: (21.8...26.2)
               1/min: 1500
5th speed
Del.quantity cm3/: -
1000H.: (26,8...31,2)
6th speed 1/min: 750
Del.quantity cm3/: 20,0...2,0,5)
Zero delivery (stop):
Electr. shutoff:
               1/min: 375
Speed
ELAB
                volt: -
Del.quantity cm3/: 0
               cm3/: 0,0...3,0
Idle delivery:
Mfg. date: until : -
1st speed
              1/min: 375
Del.quantity cm3/: -
1000H.: (4,0...12,0)
               1/min: 600
2nd speed
Del.quantity cm3/: 0,0...4,0
1000H.: -
Automatic starting fuel delivery:
1st speed
               1/min: 400
               cm3/: -
Del.quantity
               1000H: 20,0
 ind.
               1/min: 500
2nd speed
Deliquantity
               cm3/: -
               1000H: 25,0
 ax.
Shutoff electromagnet:
Cut-in
min. voltage
                     : 10,0
Rated voltage
                     : 12,0
Mounting and assembly dimensions:
Designation
                     : 3,2...3,4
                mm
KF
                    : 6,3...6,6
                mm
                    : 1,5..1,75
MS
SVS max.
                mm
                    : 4,1
                    : 18,5...20,5
XK
                mm
```

NO1

XL

Remarks:

mm : 9,2...12,9

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : VWW 2,3 B : 20.07.87 Edition replaces : 04.86 Calibrating oil : ISO 4113 Injection pump
Type number : VE 6/10F2400 L32-1 : 0 460 406 009 Type number Customer-specific information Customer : 087 Engine TEST BENCH REQUIREMENTS Calibrating-oil return temp. OC with thermometer : 40...48 electronically : 42...50 Inlet press., bar : 0,35 Calibrating nozzle-holder : 1 688 901 000 assembly Opening | pressure bar : 147...150 Test inj. tubing : 1 680 750 017 Outside diameter : 6 x Wall thickness : 2 x Length Injection-pump setting values Test specifications in parentheses Timing-device travel: 1/min: 1500 Setting value mm: 2,8...3,2 Supply-pump pressure: 1/min: 1500 Speed Setting value bar: 5,2...5,8

Full-load del. w/out charge press.:

1/min : 1500 Speed Del.quantity cm3/

1000H.: 28,5...29,5 cm3/: 2,5 1000H.: (3,0) Dispersion

	Del.quantity cm3/: 0.06.0
_ow-idle speed regulation:	Del.quantity cm3/: 0,06,0 1000H.: -
	2nd speed 1/min: 2700
Speed 1/min: 375	Del.quantity cm3/: -
Pel.quantity cm3/	Del.quantity cm3/: - 1000H.: (5,013,0)
1000H.: 6,010,0	3rd speed 1/min: 2625
Dispersion cm3/: 2,0	Del.quantity cm3/: 14.524.5 1000H:: (13.525.5)
1000H.: (3,0)	/c,c2(15,3(25,7)/
Full-load speed regulation:	4th speed 1/min: 2400
Speed 1/min: 2700	Del.quantity cm3/: 23,025,0 1000H.: (21,826,2)
Del.quantity cm3/	5th speed 1/min: 1500
1000H: 7,011,0	Del.quantity cm3/: -
1	1000H.: (26.831.2)
Start:	1000H.: (26,831,2) 6th speed 1/min: 750
1	Del.quantity cm3/: 26,029,0
Speed 1/min: 100	1000H.: (24,530,5)
Del.quantity : -	
nind cm3/1000H.: 35,0	Zero delivery (stop):
Inspection-pump test specifications	Mech. shutoff:
lest specifications in parentheses	Speed 1/min: 2400
<u> </u>	Del.quantity cm3/: 03 1000H.: -
liming-device characteristic:	,0001 =
I	Electr. shutoff:
st speed 1/min: 800	Speed 1/min: 375
D travel mm: 5,76,5	ELAB volt: -
mm: (5,46,8)	Del.quantity cm3/: 0,03,0
2nd speed 1/min: 1000	max. 1000H.: -
ID travel mm: 0,81,6	
mm: (0,51,9)	Idle delivery:
ord speed 1/min: 1500	44.6
D travel mm: -	Mfg. date: until : -
mm: (2,33,7)	1st speed 1/min: 375
ith speed	Del.quantity cm3/: - 1000H.: (4,012,0)
mm: (5,46,8)	2nd speed 1/min: 600
	Del.quantity cm3/: 0,04,0
Supply-pump pressure characteristic:	1000H.: -
, appropriate (1. 000 a. 0 0 0 0	, , , , , , , , , , , , , , , , , , ,
st speed 1/min: 750	Automatic starting fuel delivery:
Supply-pump I	
pressure bar: 3,2,3,8	1st speed 1/min: 400
ind speed 1/min: 2400	Deliquantity cm3/: -
Supply-pump	ind. 1000H: 20,0
pressure bar: 7,58,1	2nd coand 1/min: 500
Overflow quantity at overflow valve:	2nd speed
I	ax. 1000H: 25,0
st speed 1/min: 750	477
Oveflow : 4183	Shutoff electromagnet:
quantity cm3/10s: (2698)	3
Ind speed 1/min: 2400	Cut-in
Overflow : 55138	min. voltage : 10,0
quantity cm3/10s: (40153)	Rated voltage : 12,0
	· ·
elivery-quant, and breakaway char.:	Mounting and assembly dimensions:
st speed 1/min: 2800	Danianahian
	Designation

K mm : 3,2...3,4
KF mm : 6,3...6,6
MS mm : 1,5..1,75
SVS max. mm : 3,6
XK mm : 18,5...20,5
XL mm : 9,2...12,9

Remarks:

Note inst. in remarks column

Test sheet : VWW 2,4 K
Edition : 20.07.87
replaces : 04.86
Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L32-2 Type number : 0 460 406 037

Customer-specific information

Customer : VW

Engine : 087

## TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500 Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1500 Setting value bar: 5,2...5,8

Fuli-load del. W/out charge press.:

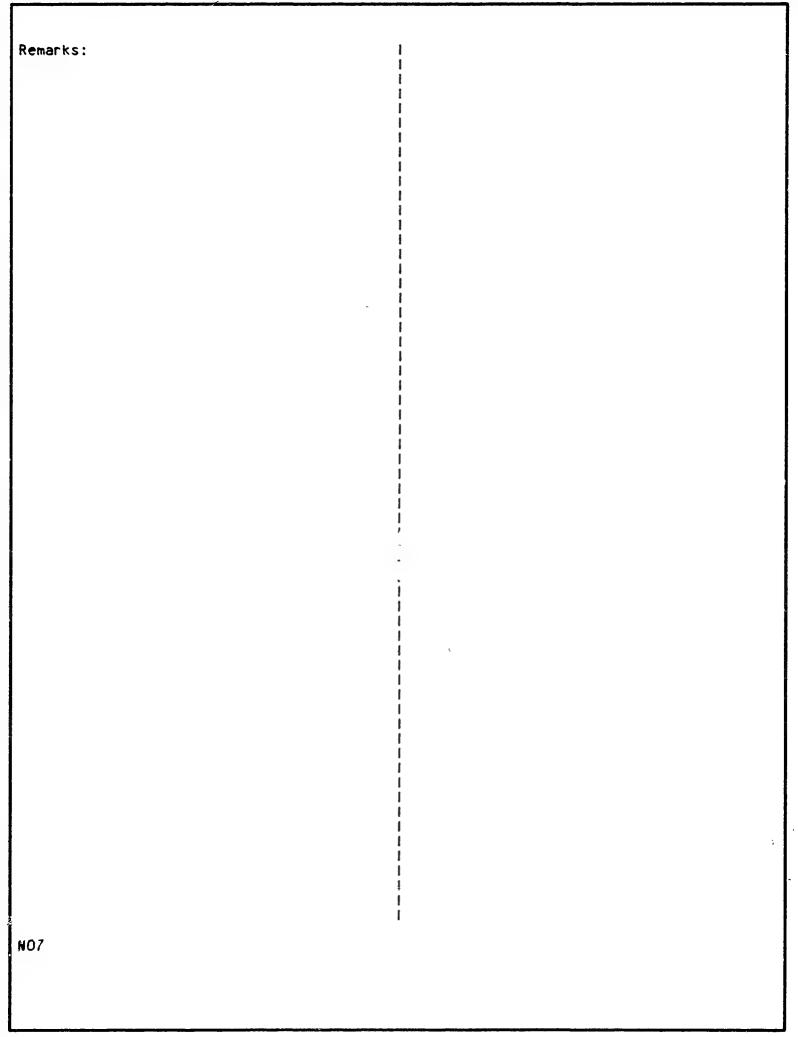
Speed 1/min : 1500

Del.quantity cm3/

1000H.: 28,5...29,5 cm3/: 2,5

Dispersion cm3/: 2.5 1000H.: (3.0)

	Del.quantity cm3/: 0,06,0
Low-idle speed regulation:	1000H.: - 2nd speed
Speed 1/min: 375	Del.quantity cm3/: -
Deliquantity cm3/	1000H.: (5,013,0)
1000H.: 6,010,0       Dispersion cm3/: 2,0	3rd speed
1000H.: (3,0)	1000H.: (13,525,5)
Full-load speed regulation:	4th speed 1/min: 2400 Del.quantity cm3/: 23,025,0
Speed 1/min: 2700	1000H.: (21,826,2)
Del.quantity cm3/	5th speed 1/min: 1500
1000H: 7,011,0	Del.quantity cm3/: - 1000H.: (26,831,2)
Start:	6th speed 1/min: 750
Connect 4 (wines 400	Del.quantity cm3/: 26,029,0
Speed 1/min: 100 ! Del.quantity : - !	1000H.: (24,530,5)
mind cm3/1000H.: 35,0	Zero delivery (stop):
Inspection-pump test specifications	Electr. shutoff:
Test specifications in parentheses	Speed 1/min: 375
į į	ELAB volt: -
Timing-device characteristic:	Del.quantity cm3/: 0,03,0 max. 1000H.: -
l. •	
1st speed	Idle delivery:
mm: (5,46,8)	Mfg. date: until : -
2nd speed 1/min: 1000	1st speed 1/min: 375
TD travel mm: 0.81.6 I mm: (0,51,9)	Del.quantity cm3/: ~ 1000H.: (4,012,0)
3rd speed 1/min: 1500	2nd speed 1/min: 600
TD travel mm: -	Del.quantity cm3/: 0,04,0
mm: (2,33,7)   4th speed	1000H.: -
TD travel mm: 5,76,5	Automatic starting fuel delivery:
mm: (5,46,8)	1st speed 1/min: 400
Supply-pump pressure characteristic:	Del.quantity cm3/: -
!	ind. 1000H: 20,0
1st speed 1/min: 750 1 Supply-pump 1	2nd speed 1/min: 500
pressure bar: 3,23,8	Del.quantity cm3/: -
2nd speed 1/min: 2400	ax. 1000H: 25,0
Supply-pump   pressure bar: 7,58,1	Shutoff electromagnet:
Overflow quantity at overflow valve:	Cut-in min. voltage : 10,0
1st speed 1/min: 750	Rated voltage : 12,0
Oveflow : 4183	
quantity cm3/10s: (2698)	Mounting and assembly dimensions:
Overflow : 55138	Designation
quantity cm3/10s: (40153)	K mm : 3,23,4
Delivery-quant. and breakaway char.:	KF mm : 6,36,6 MS mm : 1,51,75
1st speed 1/min: 2800	SVS max. mm : 3,6



Note inst. in remarks column

: VWW 2,4 K2 Test sheet : 20.07.87 Edition replaces : 04.86 Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L32-3 Type number : 0 460 406 038

: 0 460 406 038 Type number

Customer-specific information

Customer

Engine : 087

TEST BENCH REQUIREMENTS

Calibrating-cil return temp.

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening |

bar : 147...150 pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm: 840 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

1/min: 1500 Setting value mm: 2,8...3,2

Supply-pump pressure:

1/min: 1500 Setting value bar: 5,2...5,8

Full-load del. w/out charge press.:

1/min : 1500 Speed

Del.quantity cm3/ 1000H.: 28,5...29,5 Dispersion cm3/: 2,5 1000H.: (3,0)

Low-idle speed regulation:	Del.quantity cm3/: 0,06,0 1000H.: -
Law tate open togatation.	2nd speed 1/min: 2700
Speed	Del.quantity cm3/: -
Del.quantity cm3/	1000H.: (5,013,0)
1000H.: 6,010,0	3rd speed 1/min: 2625
Dispersion cm3/: 2.0	Del.quantity cm3/: 14,524,5 1000H.: (13,525,5)
1000H.: (3,0)	4th speed 1/min: 2400
Full-load speed regulation:	Del.quantity cm3/: 23.025.0
Speed 1/min: 2700	1000H.: (21,826,2)
Del, quantity cm3/	5th speed 1/min: 1500
1000H: 7,011,0	Del.quantity cm3/: -
	1000H.: (26,831,2)
Start:	6th speed 1/min: 750
Speed 1/min: 100	Del.quantity cm3/: 26,029,0 1000H.: (24,530,5)
Del.quantity : -	1000111. (24,511100,5)
mind cm3/1000H.: 35.0	Zero delivery (stop):
1	
Inspection-pump test specifications	Mech. shutoff:
Test specifications in parentheses	Speed 1/min: 2400
	Del.quantity cm3/: 03 1000H.: -
Timing-device characteristic:	10001.:
I I I I I I I I I I I I I I I I I I I	Electr. shutoff:
1st speed 1/min: 800	Speed 1/min: 375
TD travel mm: 5,76,5	ELAB volt: -
mm: (5,46,8)	Del.quantity cm3/: 0,03,0
2nd speed 1/min: 1000	max. 1000H.: -
TD travel mm: 0.81.6	Idla daliyanye
mm: (0,51,9)   3rd speed 1/min: 1500	Idle delivery:
TD travel mm: -	Mfg. date: until : -
mm: (2,33,7)	1st speed 1/min: 375
4th speed 1/min: 2400	Del.quantity cm3/: -
TD travel mm: 5,76,5	1000H.: (4,012,0)
mm: (5,46,8)	2nd speed 1/min: 600
Supply-pump pressure characteristic:	Del.quantity cm3/: 0,04,0 1000H.: -
Suppry pump pressure character istre.	1000112.
1st speed 1/min: 750	Automatic starting fuel delivery:
Supply-pump I	
pressure bar: 3,23,8	1st speed 1/min: 400
2nd speed 1/min: 2400	Del.quantity cm3/: - ind. 1000H: 20.0
Supply-pump	ind. 1900H: 20,0
pressure bar, 1,51115,1	2nd speed 1/min: 500
Overflow quantity at overflow valve:	Del.quantity cm3/: -
1	ax. 1000H: 25,0
1st speed 1/min: 750	
Oveflow : 4183	Shutoff electromagnet:
quantity cm3/10s: (2698)	Cut-in
2nd speed	min. voltage : 10,0
quantity cm3/10s: (40153)	Rated voltage : 12,0
	<b>3</b> -
Delivery-quant, and breakaway char.:	Mounting and assembly dimensions:
1st speed 1/min: 2800	Design of the
	Designation
N09	

K mm : 3,2...3,4
KF mm : 6,3...6,6
MS mm : 1,5..1,75
SVS max. mm : 3,6

Remarks:

Note inst. in remarks column

Test sheet : ONA

: 17.07.87

Edition replaces

: 16.12.86

Calibrating oil : ISO 4113

Injection pump Type number

: VE 6/10F1400 R209-1 : 0 460 406 052

Type number

Customer-specific information Customer

: ONAN

Engine

: L 634T

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. C

with thermometer : 40...48

electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening -

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6

x Wall thickness : 2

x Length

mm : 840

Start of delivery

Prestroke mm: 0,2

(from BDC): +-0.02(0.04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100

Charge press. hPa: 800

Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1100 Charge press. hPa: 800 Setting value bar: 3,8...4,4

Full-load del. with charge press.:

Charge press. hPa: 800 Supply-pump Speed 1/min: 1100 Charge press. hPa: 800 bar: 1,2...1,8 pressure Del.quantity cm3/ 1/min: 1400 2nd speed 1000H.: 61,0...62,0 Charge press. hPa: 800 cm3/:3,0Dispersion Supply-pump 1000H : pressure bar: 4,8...5,4 Full-load del. W/out charge press.: Overflow quantity at overflow valve: Speed 1/min : 700 1/min: 700 1st speed Del.quantity cm3/ Charge press. hPa: 800 1000H.: 44,5...45,5 Oveflow : 41...83 quantity cm3/10s: (26...98) nd speed 1/min: 1400 Low-idle speed regulation: 2nd speed Charge press. hPa: 800 Overflow : 55... : 55...138 Speed 1/min: 350 quantity cm3/10s: (40...153) Charge press. hPa: cm3/ Del.quantity 1000H.: 23,0...27,0 Delivery-quant. and breakaway char.: cm3/: 3,0 1st speed 1/min: 700 Dispersion 1000H.: Charge-air pressure-setting point hPa: 200
Del.quantity cm3/: 47.0...48.0
1000H.: (45.2...49.8) Full-load speed regulation: 1/min: 1480 Speed Charge press. hPa: 800 1/min: 1600 2nd speed Charge press. hPa: 800 Del.quantity cm3/ 1000H: 39,0...45,0 Del.quantity cm3/: 0,0...3,6 1000H.: -1/min: 1560 Start: 3rd speed Charge press. hPa: 800
Del.quantity cm3/: 6.0...14.0
1000H.: (5.5...14.5) 1/min: 100 Speed Del.quantity cm3/1000H.: 42,0 4th speed 1/min: 1480 mind Charge press. hPa: 800 Del.quantity cm3/: -1000H.: (37,5...46,5) Load-dependent start of delivery: 1/min: 1400 5th speed Speed 1/min: 1100 Charge press. hPa: 800 Del.quantity cm3/: 57,0...60,0 1000H.: (56,2...60,8) Inspection-pump test specifications Test specifications in parentheses 1/min: 1100 6th speed Charge press. hPa: 800 Del.quantity cm3/: -1000H.: (59,2...63,8) Timing-device characteristic: 1/min: 1100 1st speed 1/min: 800 7th speed Charge press. hPa: 800 Charge press. hPa: 800 Del.quantity cm3/: ~ 1000H.: (59,2...63,8) TD travel mm: 1,4...2,2 mm: (1,1...2,5)1/min: 700 1/min: 1100 2nd speed 8th speed Charge press. hPa: 800 TD travel mm: Del.quantity cm3/: 58.0...61.0 1000H: (57.2...61.8) mm: (2,3...3,7) 1/min: 1400 3rd speed 1/min: 700 Charge press. hPa: 800 9th speed Charge press. hPa: -Del.quantity cm3/: mm: 4,2...4,8 mm: (3,8...5,2) TD travel 1000H: (45,7...47,3) Supply-pump pressure characteristic: Zero delivery (stop): 1st speed 1/min: 400

N12

```
Mech. shutoff:
               1/min: 1400
Speed
Del.quantity cm3/: 0..3
              1000H.: -
Electr. shutoff:
               1/min: 350
Speed
ELAB
               volt: -
Del.quantity cm3/: U
               cm3/: 0,0...3,0
Idle delivery:
Mfg. date: until : -
              1/min: 350
1st speed
Del.quantity cm3/: -
1000H.: (21,0..29,0)
2nd speed 1/min: 400
Del.quantity cm3/: 9.5...16.5
1000H.: (8.5...17.5)
3rd speed 1/min: 450
Del.quantity cm3/: 0,0...3,6
1000H.: -
Automatic starting fuel delivery:
1st speed
              1/min: 230
Del.quantity cm3/: -
               1000H: 42.0
 ind.
2nd speed
              1/min: 300
Del.quantity cm3/: -
               1000H: 42,0
Shutoff electromagnet:
Cut-in
                    : 10,0
 min. voltage
Rated voltage
                    : 12,0
Mounting and assembly dimensions:
Designation
                mm
                   5,7...6,0
KF
                   : 0,7..0,95
MS
                mm
SVS max.
                   : 1,6
               mm
Remarks:
Correction at adjusting nut (46)
```

Del.quantity cm3/ 1000H.: 72,5...73,5 hisnersion cm3/: 3,0 BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1000H.: (3.5) Note inst. in remarks column : CAS 5,9 A Test sheet Low-idle speed regulation: : 17.07.87 Edition replaces Speed 1/min: 350 Del.quantity cm3/ 1000H.: 18,0...22,0 : ISO 4113 Calibrating oil cm3/: 3.0 1000H.: (3,5) Injection pump : VE 6/10F1150 R287 Dispersion : 0 460 406 056 Type number Full-load speed regulation: Customer-specific information Customer 1/min: 1200 : CASE Speed Del.quantity cm3/ 1000H: 49,0...55,0 Engine : 5 358-1056 TEST BENCH REQUIREMENTS Start: Calibrating oil oc Speed 1/min: 100 return temp. Del.quantity mind cm3/1000H.: 70,0 with thermometer : 40...48 electronically : 42...50 Inspection-pump test specifications Test specifications in parentheses Inlet press., bar : 0,35 Calibrating nozzle-holder : 1 688 901 020 Timing-device characteristic: assembly 1/min: 500 Opening 1st speed mm: 2,4...3,2 mm: (2,1...3,5) 1/min: 800 bar : 172...175 TD travel pressure Perforated-plate 2nd speed TD travel diameter mm : 0.6 mm: mm: (4,9...6,3) 1/min: 1000 3rd speed mm: 6,7...7,5 mm: (6,4...7,8) Test inj. tubing : 1 680 750 017 TD travel Outside diameter : 6 Supply-pump pressure characteristic: x Wall thickness : 2 x Length mm : 840 1st speed 1/min: 500 Injection-pump setting values Supply-pump bar: 4,0...4,6 Test specifications in parentheses pressure 1/min: 1000 2nd speed Timing-device travel: Supply-pump pressure bar: 6,1...6,7 1/min: 800 Speed Setting value mm: 5,4...5,8 Overflow quantity at overflow valve; 1/min: 500 1st speed Supply-pump pressure: Oveflow : 41...83 quantity cm3/10s: (26...98) 2nd speed 1/min: 1100 1/min: 800 Speed Setting value bar: 5,3...5,9 Over flow : 55...138 quantity cm3/10s: (40...153) Full-load del. w/out charge press.: Delivery-quant, and breakaway char.: Speed 1/min : 800 1st speed 1/min: 1350 N14

```
Del.quantity cm3/: 0,0...3,0
              1000H.:
               1/min: 1300
2nd speed
Del.quantity cm3/: 0,0...10,0
              1000H.: -
               1/min: 1250
3rd speed
               cm3/: 10,0...50,0
Del.quantity
              1000H.:
               1/min: 1200
4th speed
               cm3/: -
Del.quantity
              1000H.: (47,5...56,5)
5th speed 1/min: 1100
Del.quantity cm3/: 76.5...79.5
1000H.: (75.5...80.5)
               1/min: 800
6th speed
Del.quantity
               cm3/: •
              1000H.: (70,7...75,3)
               1/min: 500
7th speed
Del.quantity cm3/: 71,0...75,0
1000H.: (70,0...76,0)
Zero delivery (stop):
Mech. shutoff:
              1/min: 1100
Speed
Del.quantity cm3/: 0..3
              1000H.: -
Idle delivery:
Mfg. date: until
1st speed
              1/min: 350
Del.quantity cm3/: -
              1000H.: (16,0..24,0)
               1/min: 450
2nd speed
Del.quantity cm3/: 0,0...4,9
1000H.: -
Automatic starting fuel delivery:
               1/min: 350
1st speed
               cm3/: -
Del.quantity
               1000H: 80,0
 ind.
2nd speed
               1/min: 450
               cm3/: -
Del.quantity
               1000H: 80<sub>2</sub>0
 ax.
Shutoff electromagnet:
Cut-in
 min. voltage
Rated voltage
Mounting and assembly dimensions:
Designation
                    : 3,2...3,4
: 5,7...6,0
                mm
KF
                mm
                    : 1,4..1,65
MS
                mm
N15
```

SVS max. mm : 1,6 Remarks:

Note inst. in remarks column

Test sheet : SOF 2.5K Edition : 30.06.87 replaces : 08.84 Calibrating oil : ISO 4113

Injection pump : VE 4/11F1900 R127 Type number : 0 460 414 008

Customer-specific information

Customer : IVECO-SOFIM

Engine : 8140.21

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

assembly : 1 688 901 023

Opening

pressure bar : 172...175

Perforated-plate

diameter mm: 0.4

Test inj. tubing : 1 680 750 073

Outside diameter : 6 x Wall thickness : 2 x Length mm : 450

Start of delivery

Prestroke mm: 0,3

(from BDC): +-0,02(0,04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100 Charge press. hPa: 1000 Setting value mm: 4,2...4,6

Supply-pump pressure:

Speed 1/min: 1100 Charge press. hPa: 1000

```
hPa: 1000
mm: 7,6...8,4
mm: (7,3...8,7)
Setting value bar: 5,3...5,9
                                                              Charge press.
                                                              TD travel
Full-load dela with charge press.:
                1/min: 1100
Speed
                                                              Supply-pump pressure characteristic:
Charge press. hPa: 1000
Del.quantity cm3/
1000H.: 42,5...43,5
hispersion cm3/: 3,5
                                                                               1/min: 600
                                                               1st speed
                                                              Charge press.
                                                                                 hPa: 1000
                                                              Supply-pump
                                                                               bar: 3,8...4,4
1/min: 1900
hPa: 1000
               1000H: (4,0)
                                                                pressure
                                                               2nd speed
Full-load del. w/out charge press.:
                                                              Charge press.
                                                              Supply-pump
Speed
               1/min : 500
                                                                                 bar: 7,5...8,1
                                                               pressure
Deliquantity cm3/
               1000H.: 39,5...40,5
                                                              Overflow quantity at overflow valve:
Low-idle speed regulation:
                                                                               1/min: 600
                                                               1st speed
                                                              Charge press. hPa:
                1/min: 400
                                                              Oveflow
                                                                                        55...138
Speed
                                                              quantity cm3/10s: (40...153)
2nd speed 1/min: 1900
Defiguantity
                cm3/
               1000H.: 13.0...17.0
cm3/: 3.0
1000H.: (4.0)
                                                              Charge press. hPa:
Overflow:
Dispersion
                                                                                     : 55...138
                                                                quantity cm3/10s: (40...153)
Full-load speed regulation:
                1/min: 2300
Speed
                                                              Delivery-quant. and breakaway char.:
Charge press. hPa: 1000
                                                                              1/min: 900
                                                              1st speed
                                                              Charge-air pressure-setting point hPa: 400
                 cm3/
Del.quantity
                                                              point
LDA stroke
                1000H: 18,0...24,0
                                                              LDA stroke mm: 3.5
Del.quantity cm3/: 37.0...38.0
1000H.: (34.7...40.2)
Start:
Speed
                1/min: 100
                                                                               1/min: 2450
                                                              2nd speed
                                                              Charge press. hPa: 1000
Del.quantity cm3/: 0.0...10.0
1000H.: -
Del, quantity
          cm3/1000H.: 60,0
mind
                                                              3rd speed 1/min: 2300
Charge press. hPa: 1000
Del.quantity cm3/: -
1000H.: (16,5...25,5)
4th speed 1/min: 2100
Load-dependent start of delivery:
Speed
                1/min: 1100
Inspection-pump test specifications
Test specifications in parentheses
                                                              Charge press. hPa: 1000
                                                              Del.quantity cm3/: 30,0...38,0
1000H.: (29,5...38,5)
                                                                               1/min: 1900
Timing-device characteristic:
                                                              5th speed
                                                              Charge press. hPa: 1000
Del.quantity cm3/: 37,75...40,25
1000H.: (36,3...41,7)
                1/min: 800
1st speed
Charge press. hPa: 1000
TD travel
                    mm: 2,4...3,2
                                                                               1/min: 1500
                                                              6th speed
                                                              Charge press. hPa: 1000
Del.quantity cm3/: 39,75...42,25
1000H.: (38,3...43,7)
                    mm: (2,1...3,5)
                1/min: 1100
2nd speed
Charge press. hPa: 1000
TD travel
                    mm: -
                                                              7th speed
                                                                               1/min: 1100
                mm: (3,7...5,1)
1/min: 1500
                                                              Charge press. hPa: 1000
Del.quantity cm3/: -
1000H.: (40,3...45,7)
3rd speed
Charge press. hPa: 1000
                    mm: 5,8...6,6
mm: (5,5...6,9)
TD travel
                                                              8th speed
                                                                              1/min: 500
                                                              Charge press. hPa: -
              1/min: 1900
4th speed
```

N17

```
Del.quantity cm3/: -
              1000H: (37,3...42,7)
Zero delivery (stop):
Mech. shutoff:
              1/min: 1900
Speed
Del.quantity cm3/: - 1000H.: -
Idle delivery:
Mfg. date: until : -
             1/min: 350
1000H.: 25,5...34,5)
1st speed
              1/min: 400
2nd speed
Del.quantity cm3/: 13.0..17.0
1000H.: (10.5..19.5)
              1/min: 550
3rd speed
Del.quantity cm3/: 0,0...5,0
1000H.: -
Automatic starting fuel delivery:
              1/min: 200
1st speed
Deliquantity cm3/: -
              1000H: 55,0
 ind.
2nd speed
              1/min: 350
Del.quantity cm3/: -
              1000H: 55,0
Shutoff electromagnet:
Cut-in
                    : 10,0
min, voltage
Rated voltage
                    : 12,0
Mounting and assembly dimensions:
Designation
K
               mm
KF
                    : K-0T
               mm
MS
                   : 0,9..1,15
               mm
SVS max.
                   : 2,4
               mm
Remarks:
```

Note inst. in remarks column

Test sheet : PER 5.8 B5 Edition : 20.07.87

replaces

Calibrating oil : ISO 4113

Injection pump : VE 4/11F1400 R39-1 Type number : 0 460 414 035

Customer-specific information Customer : PERKINS

Engine : Q 20.B.4.236 V

#### TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar : 0,35

Calibrating nozzle-holder

assembly : 1 688 901 022

Opening

pressure bar: 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6 x Wall thickness : 2 x Length mm : 450

Start of delivery

Prestroke mm: 0,3

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100 Setting value mm: 4,6...5,0

Supply-pump pressure:

Speed %/min: 1100 Setting value bar: 4,7...5,3

Full-load del. w/out charge press.:

Harand 1/min: 1100

Del.quantity cm3/	Del.quantity cm3/: 0,015
1000H.: 72,573,5	1000H.: -
Dispersion cm3/: 2,5	2nd speed 1/min: 1550
1000H.: (4,0)	Del.quantity cm3/: 28.535.5
	Del.quantity cm3/: 28,535,5 1000H.: (27,536,5)
Low-idle speed regulation:	3rd speed 1/min: 1500
1	Del.quantity cm3/: 49,055,0
Speed 1/min: 350	1000H.: (47,556,5)
Del.quantity cm3/	4th speed 1/min: 1300
1000H.: 18,022,0	Del.quantity cm3/: 70,773,3
Dispersion cm3/: 2,5	1000H.: (69,474,6)
1000H.: (4,0)	5th speed 1/min: 1100
Full-load speed regulation:	Del.quantity cm3/: -
1	1000H.: (70,474,6)
Speed 1/min: 1500	6th speed 1/min: 500
Del.quantity cm3/	Del.quantity cm3/: 42,045,0
1000H: 49,055,0	1000H.: (40,146,9)
100011. 47,011.55,0	1000113. (40)1111447//
Start:	Zero delivery (stop):
1	zero detroci y totopi.
Speed 1/min: 100	Mech. shutoff:
Del.quantity : -	Speed 1/min: 1400
mind cm3/1000H.: 75,0	
1	Del.quantity cm3/: - 1000H.: -
Inspection-pump test specifications !	100011.
Test specifications in parentheses	Idle delivery:
rest specifications in parentheses	rate detivery.
	Mfg. date: until : -
Timino-device characteristic:	1st speed 1/min: 350
Timing-device characteristic:	Del.quantity cm3/: -
1st speed 1/min: 500	1000H.: (15,524,5)
1st speed 1/min: 500     TD travel   mm: 0,20,8	
mm: (0,01,2)   2nd speed 1/min: 1100	Del.quantity cm3/: 6,012,0 1000H.: (4,513,5)
mm: (4,15,5)	Del.quantity cm3/: 0,01,5 1000H.: -
	TOUDIT.
the contract of the contract o	Automatic starting fuel delivery:
mm: (5,56,9)	Automatic starting fuel delivery:
Cumply-symp precesses sharpertanicties	1st speed 1/min: 200
Supply-pump pressure characteristic:	
1st speed 1/min: 500	Del.quantity cm3/: - ind. 1000H: 30,0
and the state of t	ind. 1000H: 30,0
Supply-pump	2nd speed 1/min: 250
pressure bar: 2,93,5	
2nd speed 1/min: 1300	Del.quantity cm3/: - ax. 1000H: 40,0
Supply-pump	ax. 1000H: 40,0
pressure bar: 5,35,9	Chutoff alastacraspati
Avandlau avandidu at avandlau valvas	Shutoff electromagnet:
Overflow quantity at overflow valve:	Cutain
1et eneed 1/min 500	Cut-in
1st speed	min. voltage : 10,0
Oveflow : 4183	Rated voltage : 12,0
quantity cm3/10s; (2698)	Marmeine and apporting disensions
2nd speed 1/min: 1400	Mounting and assembly dimensions:
Overflow : 55138	Decienation
quantity cm3/10s: (40153)	Designation
Delivery and baselesses than	K mm: -
Delivery-quant, and breakaway char.:	KF mm : 5,15,4
1st speed 1/min: 1700	mm : 0,60,8

SVS max. mm : -Remarks:

# BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column

Test sheet : FIA 3.6 K
Edition : 20.07.87
replaces : 18.12.86
Calibrating oil : ISO 4113

Injection pump : VE 4/11F1350 R257 Type number : 0 460 414 039

Customer-specific information Customer : FIAT-IVECO

Engine : 8040.25.200

## TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

assembly : 1 688 901 020

Opening

pressure bar : 172...175

Perforated-plate

diameter mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Start of delivery

Prestroke mm: 0,4

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

## Timing-device travel:

Speed 1/min: 1000 Charge press. hPa: 1000 Setting value mm: 3,8...4,2

## Supply-pump pressure:

Speed 1/min: 1000 Charge press. hPa: 1000

```
Setting value bar: 5,7...6,3
                                                       Charge press. hPa: 1000
                                                       Supply-pump
Full-load del. with charge press.:
                                                                       bar: 3,6...4,2
                                                        pressure
                                                                     1/min: 800
                                                       2nd speed
                                                       Charge press. hPa: 1000
               1/min: 800
Speed
Charge press. hPa: 1000
                                                       Supply-pump
                                                                     bar: 4,8...5,4
1/min: 1350
Del.quantity
               cm3/
                                                       pressure
                                                       3rd speed
             1000H.: 92,5...93,5
              cm3/:5,0
                                                                       hPa: 1000
Dispersion
                                                       Charge press.
             1000H : -
                                                       Supp [y-pump
                                                       pressure
                                                                       bar: 7,0...7,6
Full-load del. w/out charge press.:
                                                       Overflow quantity at overflow valve:
             1/min : 500
Del.quantity cm3/
                                                                     1/min: 500
                                                       ist speed
             1000H.: 68,5...69,5
                                                       Charge press. hPa: 1000
                                                       Oveflow
                                                                           : 41...83
Low-idle speed regulation:
                                                        quantity cm3/10s: (26...98)
                                                                    1/min: 1350
                                                       2nd speed
              1/min: 350
Speed
                                                       Charge press. hPa: 1000
                                                                          : 55...138
Charge press. hPa: -
                                                       Overflow
               cm3/
                                                        quantity cm3/10s: (40...153)
Del.quantity
             1000H.: 22,0...26,0 cm3/: 3,5
                                                      Delivery-quant. and breakaway char.:
Dispersion
                                                       1st speed
             1000H.: (4,0)
                                                                    1/min: 500
Full-load speed regulation:
                                                       Charge-air pressure-setting
                                                                       hPa: 250
                                                       point
                                                      Del.quantity cm3/: 79.0...80.0
1000H.: (76,5...82,5)
Speed
              1/min: 1500
Charge press. hPa: 1000
Deliquantity cm3/
                                                                     1/min: 1600
                                                       2nd speed
               1000H: 34,0...40,0
                                                       Charge press. hPa: 1000
                                                      Del.quantity cm3/: 0,0...3,0
1000H.: -
Start:
                                                      3rd speed
                                                                     1/min: 1500
                                                      Charge press. hPa: 1000
Del.quantity cm3/: -
1000H.: (31,0...43,0)
Speed
              1/min: 100
Del.quantity
        cm3/1000H.: 90.0
mind
                                                       4th speed
                                                                     1/min: 1350
                                                      Charge press. hPa: 1000
Inspection-pump test specifications
                                                      Del.quantity cm3/: 86.5...89.5
1000H.: (85.0...91.0)
Test specifications in parentheses
                                                                     1/min: 800
                                                      5th speed
                                                      Charge press. hPa: 1000
Timing-device characteristic:
                                                      Deliquantity cm3/: -
                                                                    1000H.: (90,0...96,0)
              1/min: 800
1st speed
                                                                     1/min: 500
                hPa: 1000
                                                      6th speed
Charge press.
                 mm: 1,7...2,5
mm: (1,4...2,8)
                                                      Charge press. hPa: 1000
TD travel
                                                      Del.quantity cm3/: 83.5...86.5
1000H.: (82.0...88.0)
7th speed 1/min: 500
2nd speed
              1/min: 1000
                                                       7th speed
               hPa: 1000
Charge press.
                                                      Charge press. hPa: -
TD travel
                  mm:
                                                      Del.quantity cm3/: -
1000H.: (66,0...72,0)
              mm: (3,3...4,7)
1/min: 1350
3rd speed
Charge press. hPa: 1000
                 mm: 6,3...7,1
mm: (6,0...7,4)
                                                      Zero delivery (stop):
TD travel
                                                      Mech. shutoff:
                                                                     1/min: 1350
Supply-pump pressure characteristic:
                                                      Speed
                                                      Del.quantity cm3/: 0..3
1000H.: -
1st speed
              1/min: 500
```

```
Electr. shutoff:
                1/min: 350
Speed
ELAB
                 volt: -
Del.quantity cm3/: 0,0...3,0 max. 1000H.: -
Idle delivery:
Mfg. date: until : -
1st speed
               1/min: 350
Del.quantity cm3/: -

1000H.: (19.0..29.0)

2nd speed 1/min: 400

Del.quantity cm3/: 2,5...9,5

1000H.: -
                1/min: 430
3rd speed
Del.quantity cm3/: 0,0...3,0
1000H.: -
Automatic starting fuel delivery:
1st speed
                1/min: 150
Del.quantity cm3/: -
                1000H: 90,0
 ind.
2nd speed
                1/min: 230
Del.quantity cm3/: -
                1000H: 60.0
Shutoff electromagnet:
Cut-in
                      : 10,0
 min. voltage
                     : 12,0
Rated voltage
Mounting and assembly dimensions:
Designation
                 mm
KF
                      : 5,2...5,5
: 1,3..1,55
                 mm
MS
                 mm
                     : 5,6
: 17,0...19,0
SVS max.
                 mm
XK
                 mm
                     : 14,2...17,6
XL
                 mm
Remarks:
Correction at adjusting nut (46)
```

Full-load del. w/out charge press.: BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Speed 1/min : 600 Del.quantity cm3/ 1000H.: 25,9...26,9 Dispersion cm3/: 3,5 1000H.: (4,0) : PER 5.0 A : 20.07.87 Test sheet Edition replaces Calibrating oil : ISO 4113 Low-idle speed regulation: Injection pump : VE 4/11F1500 R266 : 0 460 414 041 1/min: 350 Type number Speed Del.quantity cm3/ 1000H.: 11,0...15,0 Customer-specific information cm3/: 3,0 Customer : PERKINS Dispersion 1000H .: (4.0) Engine : 500 HYDROVAN Full-load speed regulation: TEST BENCH REQUIREMENTS 1/min: 1600 Speed Del.quantity cm3/ Calibrating-oil 1000H: 12,0...18,0 return temp. with thermometer : 40...48 Start: : 42...50 electronically 1/min: 100 Speed Inlet press., bar: 0,35 Del.quantity mind cm3/1000H.: 70.0 Calibrating nozzle-holder : 1 688 901 022 assembly Inspection-pump test specifications Test specifications in parentheses Opening pressure bar : 130...133 Timing-device characteristic: Test inj. tubing : 1 680 750 073 1/min: 700 1st speed mm: 0,4...1,2 mm: (0,1...1,5) TD travel Outside diameter : 6 1/min: 1100 x Wall thickness : 2 2nd speed mm : 450 TD travel mm: x Length mm: (1,9...3,3) 1/min: 1350 Start of delivery 3rd speed mm: 3,4...4,2 mm: (3,1...4,5) 1/min: 1500 mm : 0,5 TD travel Prestroke (from BDC): +-0.02(0.04)4th speed mm: 3,7...4,5 mm: (3,4...4,8) TD travel Indicator setting: Piston stroke mm: 1.42 Outlet : A Supply-pump pressure characteristic: Injection-pump setting values 1/min: 700 Test specifications in parentheses 1st speed Supply-pump bar: 3,5,...4,1 Timing-device travel: pressure 1/min: 1500 2nd speed 1/min: 1100 Supply-pump Speed Setting value mm: 2,4...2,8 bar: 6,4...7,0 pressure Overflow quantity at overflow valve: Supply-pump pressure: 1/min: 700 1/min: 1100 1st speed Setting value bar: 4,9...5,5

N25

```
Oveflow
                    : 41...83
            cm3/10s: (26...98)
 quantity
              1/min: 1500
2nd speed
Over flow
                    : 55...138
 quantity cm3/10s: (40...153)
Delivery-quant. and breakaway char.:
1st speed
              1/min: 1650
Del.quantity cm3/: 1
1000H.:
               cm3/: 0,0...3,0
               1/min: 1600
Znd speed
Del.quantity cm3/: -
              1000H.: (10,5...19,5)
               1/min: 1500
3rd speed
Del.quantity cms/: 1000H.:
               cm3/: 45,5...48,5
               000H.: (44,4...49,6)
1/min: 1100
4th speed
Del.quantity cm3/: 44,8...47,8
1000H.: (43,7...48,9)
               1/min: 800
5th speed
Del.quantity cm3/: 36,3...38,3
1000H.: (34,7...39,9)
6th speed
               1/min: 600
Del.quantity cm3/: -
1000H.: (23,8...29,0)
Zero delivery (stop):
Mech. shutoff:
              1/min: 1500
Speed
Del.quantity cm3/: -
              1000H.: -
Idle delivery:
Mfg. date: until
              1/min: 350
1st speed
Del.quantity cm3/: -
1000H.: (8,5...17,5)
               1/min: 400
2nd speed
Del.quantity cm5/: 3,0....10,5)
3rd speed
              1/min: 460
Del.quantity cm3/: 0,0...4,5
1000H.: -
Automatic starting fuel delivery:
               1/min: 300
1st speed
Del.quantity
               cm3/: -
               1000H: 33,0
 ind.
              1/min: 400
2nd speed
Del.quantity
               cm3/: 20,0...35,0
              1000H: -
 ax.
Shutoff electromagnet:
```

: 10,0

Cut-in

N26

min. voltage

Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

mm KF : K-0T mm

: 1,2..1,45 : 3,8 MS mm

SVS max. mm

Remarks:

Note inst. in remarks column

Test sheet : PER 5.0 B Edition : 20.07.87

replaces

Calibrating oil : ISO 4113

Injection pump : VE 4/11F1500 R266-1 Type number : 0 460 414 042

Customer-specific information Customer : PERKINS

: 500 HYDROVAN Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0,35

Calibrating nozzle-holder

assembly : 1 688 901 022

Opening -

pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6 x Wall thickness : 2 x Length mm : 450

Start of delivery

Prestroke mm: 0,5

(from BDC): +-0.02(0.04)

Indicator setting:

Piston stroke mm: 1.42

Outlet : A

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1100

Setting value mm: 2,4...2,8

Supply-pump pressure:

Speed 1/min: 1100

Setting value bar: 4,9...5,5

```
Rated voltage
                    : 12,0
                                                       Oveflow
                                                                           : 41...83
                                                                   cr:3/10s: (26...98)
1/min: 1500
 ull-load del. w/out charge press.:
                                                        quantity
Mounting and assembly dimensions:
                                                       2nd speed
             1/min : 600
                                                       Over flow
                                                                           : 55...138
                                                        quantity cm3/10s: (40...153)
Designation: cm3/
                   : - .9...26,9
: K-ÓT
                mm
KF
                                                       Delivery-quant. and breakaway char.:
                mm
MS
                   : 1,2..1,45
                                                       1st speed
                mm
                                                                     1/min: 1650
                                                       Del.quantity cm3/: 0,0...3,0
1000H.: -
SVS max.
               mm
                   : 3,8
 ow-idle speed regulation:
                                                                     1/min: 1600
Remarks:
                                                       2nd speed
                                                       Del.quantity cm3/: -
Speed
              1/min: 350
                                                                    1000H.: (10,5...19,5)
1/min: 1500
Del.quantity
              cm3/
             1000H.: 11.0...15.0 cm3/: 3.0
                                                       3rd speed
                                                       Del.quantity cm3/: 45.5...48.5
1000H.: (44.4...49.6)
4th speed 1/min: 1100
Dispersion
             1000H.: (4,0)
Full-load speed regulation:
                                                       Del.quantity cm3/: 44.8...47.8
1000H.: (43.7...48.9)
Speed
              1/min: 1600
Deliquantity
                                                                     1/min: 800
               cm3/
                                                       5th speed
                                                       Del.quantity cm3/: 36,3...38,3
              1000H: 12,0...18,0
                                                                    1000H.: (34,7...39,9)
                                                                     1/min: 600
Start:
                                                       6th speed
                                                       Del.quantity cm3/: -
1000H.: (23,8...29,0)
              1/min: 100
Speed
Del.quantity
        cm3/1000H.: 70.0
                                                       Zero delivery (stop):
mind
                                                       Mech. shutoff:
Inspection-pump test specifications
Test specifications in parentheses
                                                       Speed
                                                                     1/min: 1500
                                                       Del.quantity cm3/: - 1000H.: -
Timing-device characteristic:
                                                       Idle delivery:
              1/min: 700
1st speed
                  mm: 0,4...1,2
TD travel
                                                       Mfg. date: until
                  mm: (0,1...1,5)
                                                                     1/min: 350
                                                       1st speed
2nd speed
              1/min: 1100
                                                       Del.quantity
                                                                      cm3/: -
                                                                    1000H.: (8,5...17,5)
TD travel
                 mm:
              mm: (1,9...3,3)
1/min: 1350
                                                       2nd speed
                                                                     1/min: 400
                                                       Del.quantity cm3/: 3,0....10,5)
3rd speed
                 mm: 3,4...4,2
mm: (3,1...4,5)
TD travel
                                                                     1/min: 460
                                                       3rd speed
                                                       Del.quantity cm3/: 0,0...4,5
1000H.: -
              1/min: 1500
4th speed
                 mm: 3,7...4,5
mm: (3,4...4,8)
TD travel
                                                       Automatic starting fuel delivery:
Supply-pump pressure characteristic:
                                                                     1/min: 300
                                                       1st speed
              1/min: 700
                                                                      cm3/:
1st speed
                                                       Del.quantity
                                                        ind.
                                                                     1000H: 33,0
Supply-pump
                bar: 3,5...4,1
 pressure
              1/min: 1500
                                                       2nd speed
                                                                     1/min: 400
2nd speed
Supply-pump
                                                       Del.quantity cm3/: 20,0...35,0
                bar: 6,4...7,0
                                                                     1000H: -
 pressure
Overflow quantity at overflow valve:
                                                       Shutoff electromagnet:
              1/min: 700
                                                       Cut-in
1st speed
                                                                           : 10,0
                                                        min. voltage
```